

# SHORE LINE CHANGE ATLAS OF THE INDIAN COAST

(Volume-IV)

Tamil Nadu and Andhra Pradesh



SPACE APPLICATIONS CENTRE, ISRO  
Ahmedabad

August-2021

## **DOCUMENT CONTROL AND DATA SHEET**

Report No. and Date	SAC/EPSA/GHCAG/GSD/ATLAS/2020/04, August 2021
Title	Shoreline Change Atlas of India (Volume – IV Tamil Nadu, Puducherry and Andhra Pradesh)
Type of Report	Atlas (Other documents)
No. of Pages, Tables, Figures, Plates	204, 6, 2, 8
No. of References	4
Authors	Project Team (As per attached list)
Originating Unit	GSD/GHCAG/EPSA/SAC
Abstract	This Atlas comprises of shoreline change maps prepared using satellite data of 2004-06 and 2014-16 time-frames on 1:25,000 scale for the entire country (Volume – IV shows maps of Tamil Nadu, Puducherry and Andhra Pradesh). The maps show eroding, stable and accreting coast. Data used, methodology, results, area under erosion and accretion and status of coastal protection measures are briefly described. Around 189 km of the Tamil Nadu coast is accreting, while erosion is along 129 km and the coast is stable for 532 km. Total area that have eroded in Tamil Nadu is about 358 ha and around 471 ha of area have accreted. In Andhra Pradesh, accretion is along 208 km of the coast and 189 km is eroding, while 413 km show no changes. Total area of about 796 ha have eroded in Andhra Pradesh and 808 ha area have formed due to accretion.
Keywords	Shoreline change map, erosion, accretion, stable coast, coastal protection measures.
Security Classification	Unrestricted
Distribution	General

How to cite: "Ratheesh R., Rajput P., Bhatti H., Rajawat A.S and Rajak D.R., 2021, Shoreline Change Atlas of India-Volume IV, Space Applications Centre-ISRO, Ahmedabad. Report no: SAC/EPSA/GHCAG/GSD/ATLAS/2020/04".

## **PROJECT TEAM**

Shri Ratheesh Ramakrishnan  
Ms. Preeti Rajput  
Shri Hiren Bhatti  
Dr. A.S Rajawat  
Dr. D. Ram Rajak

## **Map Quality Check Team**

Shri T.V.R Murthy  
Shri J.G Patel  
Shri R.J Bhanderi  
Shri B.P Rathore  
Shri Manish Parmar

एस. के. हालदार  
अध्यक्ष  
तथा पदेन सचिव, भारत सरकार  
**S. K. HALDAR**  
**CHAIRMAN**  
**& ex-officio Secretary**  
**to the Government of India**



भारत सरकार  
जल शक्ति मंत्रालय  
जल संसाधन, नदी विकास और गंगा संरक्षण विभाग,  
केन्द्रीय जल आयोग  
Government of India  
Ministry of Jal Shakti  
Dept. of Water Resources,  
River Development and Ganga Rejuvenation,  
**Central Water Commission**

## MESSAGE

The Coastal Zone represents a complex environmental entity, which is in constant interaction with the marine and terrestrial processes. The coastal zone has been receiving increased attention due to the immense anthropogenic pressure and inevitable development activities related to trade and transport. The coast is bestowed with rich bio-diversity and fragile ecosystems like mangroves and coral reefs that are highly sensitive to any climatic and environmental changes.

The coastal region, due to the influence of natural and anthropogenic forces and the sporadic events like cyclones undergo severe erosions leading to loss of human livelihood and crucial biodiversity besides critically damaging the coastal constructions and aesthetic quality that attracts huge economic benefits. Quantifying coastal change is essential for calculating trends in erosion, evaluating processes that shape coastal landscapes and predicting the response of coast to future storms and sea-level rise. The dynamic natures of the coast prompt for frequent monitoring and comprehending the coastal erosion activities. Space technology has been effectively deployed in identification and measurement of such activities.

Space Applications Centre (SAC) in collaboration with a large number of scientific organization & universities of the country has carried out various scientific investigation/inventory of the entire coastal zone of India using satellite data like impact of sea level rise on the Indian coastal environment, development of Coastal Zone Information System (CZIS), mapping and monitoring of coral reefs and mangroves, inventory of the coastal land use etc. One such significant work was preparation of Shoreline Change Atlas of India for the time frame 1989-91 and 2004-06.

The present Shoreline Change Atlas is an outcome of the shoreline change mapped for the entire Indian coast between the time frames of 2004-06 and 2014-16 carried out by Space Applications Centre, ISRO, Ahmedabad based on recommendation of Coastal Protection and Development Advisory Committee (CPDAC) at the request of Central Water Commission, Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti, Government of India.

I congratulate the team of scientists for carrying out such an important study for the entire Indian coast. This study assumes greater significance in the context of planning shoreline protection measures to be constructed by various maritime States and UTs. I am sure this atlas will be highly useful not only to the coastal zone managers and to the authorities involved but also to the scientific community working in the coastal environment and climate change studies.

*(S.K. Haldar)*

(S.K. Haldar)  
Chairman  
Central Water Commission





एन एम देसाई / N M Desai  
विशिष्ट वैज्ञानिक / Distinguished Scientist  
निदेशक / Director

भारत सरकार GOVERNMENT OF INDIA  
अंतरिक्ष विभाग DEPARTMENT OF SPACE  
**अंतरिक्ष उपयोग केंद्र**  
SPACE APPLICATIONS CENTRE  
अहमदाबाद AHMEDABAD - 380 015  
(भारत) / (INDIA)  
दूरभाष / PHONE : +91-79-26913344, 26928401  
फैक्स / FAX : +91-79-26915843  
ई-मेल / E-mail : director@sac.isro.gov.in



## FOREWORD

Coastal zone is one of the most fragile ecosystems having rich biodiversity and is characterised by constant interactions between various natural processes and human activities. Human interventions along the global coastal zones are profoundly increasing and may lead to disastrous consequences, if developmental activities are carried out with improper understanding of the coastal processes. In addition, the coastal ecosystems are also vulnerable to natural phenomena such as waves, tides, storm surges, erosion etc.

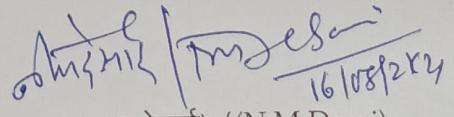
India has more than 7500 km. long coastline with diverse coastal ecosystem and hence, Coastal Zone in India, assumes its importance, more so because of high population pressure, development of various industries, spurt in recreational activities, exploitation of renewable and non-renewable natural resources, discharge of waste effluents and municipal sewage etc. The Indian shoreline is also dotted with vital coastal habitats like mangrove and coral reefs, ecological sensitive and biologically diverse regions and archaeologically and culturally important places. The natural and anthropogenic activities change the equilibrium of sediment transport along the coast and induce coastal erosion, thereby threatening the valuable resources. In view of its dynamic nature, frequent monitoring of the coast is also required and that can be achieved only through satellite based methods.

In India, the use of satellite data for coastal zone studies have been initiated by Space Applications Centre (SAC), ISRO, Ahmedabad in collaboration with various scientific organisations and universities across the country. For the past 30 years, SAC has been engaged in conducting various national level programmes aimed at detailed scientific investigations and preparing inventory of the entire coastal zone of India. I am happy to know that geo-sciences team at SAC/ISRO has completed Indian coastal shoreline change analysis (for 2004-06 and 2014-16 time frames) using Resourcesat-1&2 LISS-IV data and publishing these maps in the form of an atlas in six (6) volumes.

I am sure, this 6-volume atlas will be useful to the scientific community and decision makers in investigating the coastal challenges as well as for taking appropriate actions to protect the Indian coast, which will go a long way in conserving the coastal environment of the country. I would like to place on record my deep appreciation for all those scientists and support staff, who have made contributions for the successful execution of this project.

Place: Ahmedabad

Date: 16 August 2021

  
(एन एम देसाई) / (N M Desai)  
निदेशक / Director

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केन्द्र  
आंबावाडी विस्तार डाक घर,  
अहमदाबाद-380 015. (भारत)  
दूरभाष : +91-79-26913050, 26913060  
वेबसाईट : [www.sac.isro.gov.in](http://www.sac.isro.gov.in)/[www.sac.gov.in](http://www.sac.gov.in)



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE**  
Ambawadi Vistar P.O.  
Ahmedabad - 380 015. (INDIA)  
Telephone : +91-79-26913050, 26913060  
website : [www.sac.isro.gov.in](http://www.sac.isro.gov.in)/[www.sac.gov.in](http://www.sac.gov.in)

I M Bahuguna  
Deputy Director, EPSA



## PREFACE

*Coastal regions of the world undergo a continuous process of erosion & accretion due to natural reasons and anthropogenic as well. The climatic change and consequently the rise in sea level is likely to be one of the major factors causing coastal erosion and accretion in the near future. The risks and hazards arising due to coastal erosion have raised a serious concern for the Indian coastal regions too, as a large population survives on the economy of its resources. Coastal erosion and accretion are reflected as the shift in the shoreline. Hence, a systematic and repetitive inventory and monitoring of shoreline change are the pre-requisite for a proper coastal management and forms the baseline data to carry out coastal protection measures by the maritime States and Union Territories besides its use by the scientific community.*

*Space Applications Centre (ISRO) had brought out Atlas of maps showing shoreline changes for the entire Indian coast between time frame 1989–1991 and 2004–2006 at 1:25,000 scale. The project was funded by Coastal Management Directorate, Central Water Commission, Ministry of Water Resources, New Delhi. Coastal Protection and Development Advisory Committee (apex body concerned with planning of coastal protection measures at the national level in India) requested Space Applications Centre to update the existing shoreline change maps using recent satellite data (2014-16 time frame) for assessing status of coastal erosion. The mapping has been completed at 1:25,000 scale using IRS LISS IV data and changes in shoreline have been brought out between 2004-06 and 2014-16 time frame.*

*The atlas also shows location and type of coastal protection measures taken up by maritime states and UTs based on the data provided. The atlas has been brought out in six volumes covering the entire Indian coastline. Six volumes contain 618 maps prepared covering 7549 km of the Indian coastline. The maps suggest that about 1144 km is under erosion, 1084 km is under accretion and 5321 km of the coastline has been observed showing no change.*

*I congratulate the entire team specially Mr. Ratheesh Ramakrishnan, Scientist SF and Mrs. Preeti Rajput, Scientist SD of Space Applications Centre, ISRO Ahmedabad.*

A handwritten signature in blue ink, appearing to read "I M Bahuguna".  
(I M Bahuguna)

## SUMMARY

Shoreline is a dynamic geomorphological entity that coincides with the physical interface of land and ocean. The shoreline responds to the coastal processes exerted by waves, tides, nearshore currents and the resultant sediment transport and the pressure exerted by anthropogenic influences. The equilibrium in the sediment supply gets disturbed due to either natural phenomena or human intervention causing shoreline changes. The shoreline changes are attributed as erosion (accretion), where the shoreline shift landwards (seawards). The change in shoreline positions are of essential importance to the coastal scientists, engineers and managements, where the shoreline change information is required in the design of any sustainable management plans.

Coastal erosion poses threat to the life and livelihood along the shoreline, destroying settlements and infrastructures like road and pose major hazard to the ecologically sensitive habitats like mangroves and turtle nesting grounds. Coastal erosion, as in other maritime countries, is a serious problem along the Indian coast. India forms a peninsula and has a long coast on its east and west regions with varied coastal processes dominating the coastal dynamics. The Indian coast is relentlessly modified by the mounting development activities along the coastal region, which under improper management at times leads to severe coastal erosion.

Inventory related to coastal erosion are a pre-requisite in understanding the coastal dynamics of the region. Planning measures for sustainable development along the coastal region require a systematic inventory of shoreline changes. In this view, Space Applications Centre in collaboration with Central Water Commission, mapped the shoreline changes for the time frame 1989-91 and 2004-06 on 1:25, 000 scale for the entire Indian coast based on multiday remote sensing data in GIS environment. The database were then used to generate A3 size Shoreline Change Atlas of all the maritime states of India. Central Water Commission requested to update the existing shoreline change maps (1989-91 & 2004-06 time-frame) using the satellite data of 2014-16 time-frame. The major objective was to prepare digital shoreline change atlas on 1:25, 000 scale in GIS environment using the shoreline delineated for the time-frame 2004-06 and 2014-16, depict and quantify shoreline changes as eroding/accreting/stable, show status of shoreline protection measures taken by respective states.

Assessment of shoreline change using satellite images have gained its applicability owing to the synoptic observations covering a large spatial scale and its availability in temporal domain. LISS-4 images of 2014-16 (on board Resourcesat-2) and 2004-06 (on board IRS P6) time-frames

have been used to delineate the shoreline for entire Indian coast. The high tide line (HTL) is considered as the shoreline and on-screen digitization of the HTL has been carried out based on the geomorphic indicators.

The shoreline change status along 7549 km of the Indian coast is assessed that excludes river/creek mouths. About 1144 km of the Indian coast is under erosion, while 1084 km of the coast is accreting and the coastline is observed to be stable along 5321 km. The Indian coastal region have in total lost around 3680 ha of land due to erosion whereas around 4042 ha of area have been gained due to accretion. West Bengal coast is having around 35 percentage of its coast under erosion, which is the largest among the Indian coastal state and percentage of shoreline under accretion is the largest for Andhra Pradesh state (26%). Percentage of stable coast is largest along the Gujarat coast (87%) followed by the Lakshadweep Islands (82%), while more than 57 percentage of the West Bengal coast is under either erosion or accretion. A long coastal stretch to the northern Andhra Pradesh coast is eroding whereas a long coastal stretch along the Saurashtra coast of Gujarat is stable in nature.

The major natural processes involved in the coastal erosion are the wave induced erosion and littoral drift. Alongshore shift of inlets are observed due to growth of spits and erosion at the other side and is dominant at Chilika inlet, Odisha and Mulki-Pavanje Estuary, Karnataka. The processes of longshore sediment transport occurring naturally along the coasts are highly altered by the constructions of breakwaters and have triggered coastal erosion due to obstruction of the littoral drift. Sand mining and land reclamation are the other anthropogenic activities altering the sediment dynamics and triggering coastal erosion. Andaman and Nicobar Island is observed to have critical shoreline changes, where the coast is regaining the equilibrium after the subsidence, uplift and erosion due to tsunami associated with the 2004 mega earthquake. The inventory along with current status of coastal protection measures taken up by concerned state departments has been used to prepare a Shoreline Change Atlas of the Indian Coast.

The baseline data are aimed towards initiating appropriate action by concerned Maritime states and UTs besides use by the scientific community as well decision makers of the country. The Atlas shall function as a reference material to obtain information on the status of shoreline changes during 2004-06 and 2014-16 time-frames along entire Indian coastline. Areas under coastal erosion and status of coastal protection measures taken up by respective maritime State and Union Territory are depicted and can be used for planning coastal protection measures.

# **CONTENTS**

	Page No
<b>SECTION-I</b>	
1	INTRODUCTION
2	DATA USED
3	METHODOLOGY
4	RESULTS
	TAMIL NADU AND PUDUCHERRY
	ANDHRA PRADESH
5	ENDUSE
	ACKNOWLEDGEMENTS
	REFERENCES
<b>SECTION-II</b>	
i)	SHORE LINE CHANGE MAPS
ii)	HOT SPOTS OF SHORELINE CHANGE
iii)	LIST OF SATELLITE DATA USED

## LIST OF TABLES

Table no	Title	Page No.
1	Mapsheet-wise results of shoreline changes for 2004-06 and 2014-16 time-frame for Tamil Nadu and Puducherry coast.	9
2	Mapsheet-wise results of shoreline changes for 2004-06 and 2014-16 time-frame for Andhra Pradesh coast.	12
3	Satellite data used for Tamil Nadu and Puducherry (2004-06 time-frame)	195
4	Satellite data used for Tamil Nadu and Puducherry (2014-16 time-frame)	198
5	Satellite data used for Tamil Nadu and Puducherry (2004-06 time-frame)	200
6	Satellite data used for Andhra Pradesh (2014-16 time-frame)	202

## LIST OF FIGURES

Figure no	Title	Page No.
1	Shoreline change status of Tamil Nadu and Puducherry coast	7
2	Shoreline change status of Andhra Pradesh coast.	11

## LIST OF PLATES

Plate no	Title	Page No.
1	Coastal erosion at Chinnaturai (58H03SW) marked on LISS IV images of IRS P6 and Resourcesat-2	190
2	Erosion and accretion near Ervadi (58K12NE) marked on LISS IV images of IRS P6 and Resourcesat-2	190
3	Erosion along the spit at Pichavaram (58M15NW) marked on LISS IV images of IRS P6 and Resourcesat-2	191
4	Erosion to the north of northern breakwater located near Karungali (66C07SW) marked on LISS IV images of IRS P6 and Resourcesat-2	191
5	Accreting and eroding shoreline at Samatiyalakuppam (66C01SE and 66C05SW) marked on LISS IV images of IRS P6 and Resourcesat-2	192

6	Erosion of the mouth to the north of Upputeru Canal (66A09SW) marked on LISS IV images of IRS P6 and Resourcesat-2	192
7	Erosion to the north of Godavari River (65H11SE) marked on LISS IV images of IRS P6 and Resourcesat-2	193
8	Erosion to the north of Gosthani River (65O05NE) marked on LISS IV images of IRS P6 and Resourcesat-2	193

## 1. INTRODUCTION

The coastal zone is in constant interaction between various natural processes and human activities that leads to a modification of its geomorphology. Coastal zone in India assumes its importance due the presence of fragile ecosystems and its interaction with anthropogenic activities. The coast is also subjected to exploitation of natural resources and is used as a medium for discharge of waste effluent and municipal sewages. The coastal regions are also overburdened with mounting developmental activities, increasing load on harbours, spurt in recreational activities and above all petroleum exploration activities.

Shoreline is a dynamic geomorphological entity, which responds to the external forces exerted by waves, tides, nearshore currents and the resultant sediment transport. When the resultant sediment transport entering a particular area is greater than the sediment going out from the area, accretion or beach development takes place. On the other hand, when there is a deficit of the incoming sediment supply into a particular area with reference to the sediment going out of the same area, beach erosion takes place. The equilibrium in the sediment supply is fairly maintained by the coastal geomorphic environment. However, sometimes this equilibrium gets disturbed due to either natural phenomena or human intervention. Natural phenomenon like intense wave activities during monsoon, cyclones and changes in river mouth during flood conditions contributes towards disrupting the equilibrium, while construction of coastal structures like breakwaters, dam construction in the rivers are the human interventions

India has a long shoreline of about 7500 km including its island territories. The destruction and loss of land due to erosion is a severe problem, particularly for a country like India facing an increased population growth. Erosion of the coastal region poses a major threat not only to the human population, but also to the vital coastal ecosystem. The dynamic interaction between nearshore features and the hydrodynamics of the region, termed as coastal processes, determines the stability of the adjacent shoreline. Moreover, various developments along the coast enhance the changes in the shoreline. Indian coast forms a peninsula and has a long coast on its east and west regions with varied coastal processes dominating the coastal dynamics. These include tide-

dominated regions along the northern parts of the west coast, open coast with high wave energy along the southern parts of the west coast, strong longshore sediment transport along the southern parts of the east coast and the coast strongly influenced with river discharges along the northern parts of the east coast. The coastal geomorphology and the land-use pattern along the Indian coast also show a varied range, which includes coral reefs, mangrove belts, tidal mudflats, rocky coasts, wide sandy beaches and deltaic and bay environments.

The Indian coast is relentlessly modified by the mounting development activities along the coastal region, which under improper management at times leads to severe coastal erosion. Management plans with proper understanding of the coastal processes and coastal dynamics are needed to achieve sustainable development along the coastal region, where planning measures have to be taken up at the national level. Inventory related to coastal erosion are a pre-requisite in understanding the coastal dynamics of the region. Planning measures for sustainable development along the coastal region require a systematic inventory of shoreline changes occurring along the entire Indian coast on 1 : 25,000 scale. Space Applications Centre, along with Coastal Protection and Development Advisory Committee (CPDAC) (apex body concerned with planning of coastal protection measures at the national level in India) have brought out shoreline change atlas (SAC, 2014 and Rajawat et al, 2015). The atlas depicts the shoreline changes for the time-frame 1989-1991 (using SPOT-1/2 HRV1-MLA) and 2004–2006 (using IRS-P6 LISSIV), that was mapped on 1 : 25,000 scale for the entire Indian coast.

Coastal Management Directorate, Central Water Commission, Ministry of Water Resources, New Delhi have requested to update the existing shoreline change maps (1989-91 & 2004-06 time-frame) using recent satellite data (2014-16 time-frame) for assessing coastal erosion. CPDAC recommended the need for preparation of Shoreline Change Atlas of the Indian coast showing information related to coastal erosion derived from satellite data and protection measures undertaken by all maritime states of India. It is in this context, Space Applications Centre in collaboration with Central Water Commission, have mapped the shoreline for the time-frame 2014-16 on 1:25, 000 scale for the entire Indian coast based on LISS-IV images of 2014-16 in GIS environment. The information is

catalogued as per Survey of India topographical map indexing which is 1:25000 Scale.

The major objective is to prepare digital shoreline change atlas on 1:25, 000 scale in GIS environment using the shoreline delineated for the time-frame 2004-06 and 2014-16. The atlas shall depict and quantify shoreline changes as eroding/accreting/stable, show status of shoreline protection measures taken by respective states and generate A3 size state wise Coastal Atlas of all the maritime states of India.

The detailed objectives are:

- i) To prepare shoreline database of 2014-16 time-frame for all the maritime states and UT.
- ii) To quantify and classify the shoreline as shoreline under erosion, stable and accretion for entire Indian coast by integrating shoreline using database of 2004-06 and 2014-16 period.
- iii) To integrate the information on coastal erosion and shoreline protection measures of all the maritime states and UT of India in GIS environment.
- iv) To generate Six Volumes of A-3 size coloured Coastal Atlas of India (Volume I covering Gujarat, Daman & Diu, Volume II covering Maharashtra & Goa, Volume III covering Karnataka & Kerala, Volume IV covering Tamil Nadu, Pondicherry & Andhra Pradesh, Volume V covering Odisha & West Bengal and Volume VI covering Lakshadweep & Andaman & Nicobar).

## **2. DATA USED**

High tidal line is demarcated using IRS-P6 LISSIV data of 2004-06 period and Resourcesat-2 LISS-IV data of 2014-16 time-frame procured from NRSC. The LISS-IV is a multispectral (three-VNIR-band) push-broom camera having a spatial resolution of 5.8m with a swath of 23.9km for IRS-P6 and 70km for Resourcesat-2. Both the satellites orbits in a sun-synchronous orbit at an altitude of 817km with a 5-day revisit cycle.

Detailed list of the satellite data used is given in the Annexure-III. In few cases where suitable data were not available, the data of nearest time-frame was used. Shoreline changes are computed with respect to the spatial changes in the Highest High Tide Line. The status of coastal protection measures taken up by maritime states and UTs was provided through Central Water Commission (CWC), New Delhi. These were prepared in spatial format and were put in the GIS database.

### **DATABASE Standards**

Satellite images of Resourcesat LISS-IV, having a spatial resolution of 5 m is used for both 2004-06 and 2014-16 time frame. Geometric projection for the images are set to UTM (Standard LANDSAT projection for Indian region). Image to image rectifications are carried out with an overlap error less than 1 pixel.

The vector layers are projected in polyconic projection system, with a planimetric accuracy of 6.25 m and weed tolerance of 3.125 m. Onscreen digitization are carried out in 1:12,500 scale. “State” and “year” attributes are created for the high tide line digitised using the satellite images.

### **3. METHODOLOGY**

We have undertaken following steps to prepare shoreline change atlas:

- i. LISS-IV images of 2014-16 (on board Resourcesat-2) and 2004-06 (on board IRS P6) time-frames have been used to delineate the shoreline for entire Indian coast. LANDSAT orthorectified products are used as base map. Image to image co-registration is carried out on LISS-IV images of both time-frames to bring the data set to same geo-reference with an error of +/- 1 pixel.
- ii. High tide line (HTL) is considered as the shoreline. On-screen digitization of the HTL has been carried out based on the geomorphic indicators (NCSCM, 2015). Image interpretation keys based on Nayak et al (1991) is used to identify the geomorphic indicators to delineate the HTL.
- iii. The HTL is prepared for all maritime states and Union territories of India on 1:25,000 scale. The 1°X1° grid consists of 8X8 rectangular grids or cells. Each rectangular grid or cell represents one Survey of India (SOI) topographic area on 1:25,000 scale.
- iv. Limited field checks were carried out and based on field observations, corrections were incorporated while finalizing the map. Field photographs were also taken during the field visits.
- v. Accuracy Assessment: Classification as well as planimetric accuracy of the maps was assessed while carrying out the fieldwork. Overall, the classification accuracy of these maps range from 90-95% at 90% confidence level. The Planimetric Accuracy of these maps is 6.25 m as per SOI standard.
- vi. Spatial layer for habitation (as point feature) and, rail and road (as line features) are taken from CZIS database.
- vii. Spatial analysis techniques are used to compute the spatial shift among the HTL of different time frame.
- viii. Polygons for areas under erosion and accretion were created.

- ix. Areas under erosion and accretion were measured for the main shoreline (excluding creeks, river mouths, estuaries). Shore length under erosion, accretion and stable categories were measured for the main shoreline (excluding creeks, river mouths, estuaries). Areas with no changes were consider as stable.
- x. A table containing the length of eroding, accreting and stable coast along with the area of erosion and accretion for each SOI grid has been generated for the maritime state and U.T.
- xi. Shoreline protection measures have been depicted as per the information provided by the maritime State/UT agencies through Central Water Commission.
- xii. A standard map composition and layout were finalised and have been used for final map composition of each map.
- xiii. Final maps depicting shoreline changes were utilized for preparing shoreline change Atlas of the Indian coast (Six Volumes). Volume I covers Gujarat, Daman & Diu, Volume II covers Maharashtra & Goa, Volume III covers Karnataka & Kerala, Volume IV covers Tamil Nadu, Puducherry & Andhra Pradesh, Volume V covers Odisha & West Bengal and Volume VI covers Lakshadweep & Andaman & Nicobar Islands.

## 4. RESULTS

The shoreline change maps of Tamil Nadu, Puducherry and Andhra Pradesh coasts at each SOI grid at 1:25000 scale are given in Section-II.

### Tamil Nadu and Puducherry

Tamil Nadu is located on the southern part of the Indian peninsular coast. About 46 rivers, draining a total catchment of about 171 000, sq. km empty along this coastline. Kaveri delta forms the biggest sediment depository along the Tamil Nadu coast. The Gulf of Mannar and Palk Strait to the southern coast comprises of unique coastal features enriched with coral islands and mangrove habitats. Apart from this, there are a number of small lagoons along the Tamil Nadu coast. Puducherry is a Union Territory scattered over two locations in Tamil Nadu: Puducherry and Karaikal.

The shoreline change along the Tamil Nadu coast is estimated for 849 km of the coastal stretch (which does not include the mouth of the river/estuary, creeks and their inner parts). The change analysis have avoided the coastal segments at major ports and harbours. Around 189 km of the coast is accreting, while erosion happened along 129 km. The coast is stable in nature for around 532 km (Figure 1). Total area that have eroded between 2004-06 to 2014-16 is about 358 ha and around 471 ha of area have accreted. Details of the erosion/accretion status for Tamil Nadu coast at each SOI grid is given in Table1.

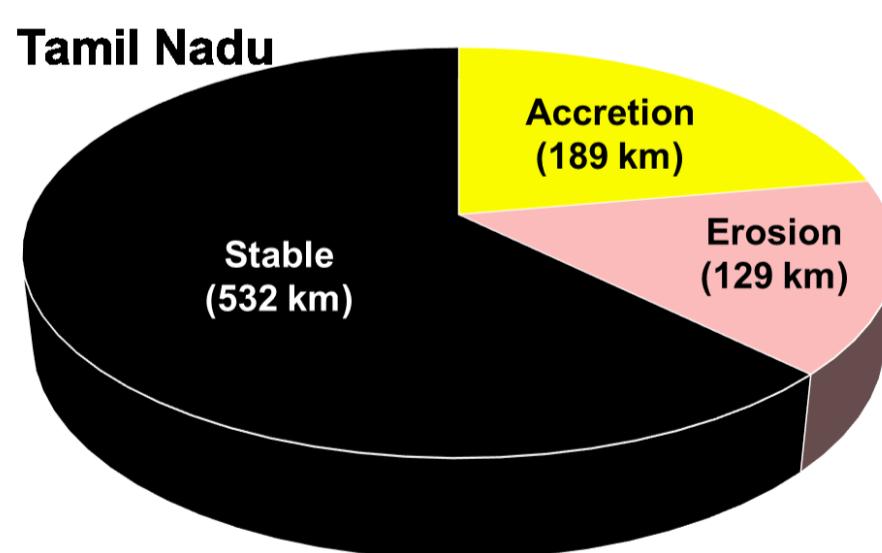


Figure 1: Shoreline change status of the Tamil Nadu and Puducherry coast

Tamil Nadu coast is divided into 4 sectors based on the coastal geomorphology and district boundaries. The southern sector comprises of the coast located along the Arabian Sea and parts of Gulf of Mannar. This sector includes the shoreline along the districts

of Kanyakumari, Thirunelveli and Thoothukkudi. The second sector is located within the Gulf of Mannar and Palk Strait that includes Ramanathapuram, Pudukkottai and Thanjavur Districts. Kaveri Delta forms the third sector and comprises of Thiruvarur, Nagapattinam, Karaikal (Puducherry) and Cuddalore Districts. The northern sector comprises of Puducehrry, Villupuram, Kacheepuram, Chennai and Thiruvallur Districts.

The southern sector have erosion along 42 km of its coast and 56 km is observed to be accreting. Around 121 km of the coast in the southern sector is stable in nature. A long stretch of shoreline facing the Arabian Sea from Niradhurai (58H03SW) to Mandakad (58H08NW) is eroding. Plate 1 shows the coastal erosion at Chinnaturai (58H03SW). The shoreline at the southern sector along Ovari (58H15SE), north of Kuttam (58H15SE), Kulasekarapattinam (58L03NW), mouth of Tamirabarani River (58L02NE), Kilayippar (58L05NW and 58K08SW) and Vembar (58K08SW) are having significant coastal erosion. Accretion of the coastal region is mainly observed along Karikovil (58H15SW), Aalagappapuram (58L03SW) and to the coastal region near Thangammalpuram (58L02NE).

The second coastal sector located to the coast of Gulf of Mannar and Palk Strait have a coastal erosion along 22 km, accretion of 41 km and 208 km of coast is stable. Sequence of small promontories have resulted in different coastal orientation with respect to the dominant wave direction and an irregular erosion and accretion patterns. Plate 2 shows the erosion and accretion due to the change in coastal orientation near Ervadi (58K12NE). The shoreline along the Palk Strait is stable in nature with patches of accreting and erosion. Rockalnagar (58K08SE), mouth of Gundar River (58K08NE), Kalimankudu (58K15SW), Periapattinam (58K15SE), Pamaban (58O03SE), northern coast at Mandapam (58O03SW) are the coastal regions in the second sector that have undergone erosion. Accretion of the coast is significant at Mariyur (58K10NW), southern coast of Pamban (58O03SE & 58O07SW). The spit south of Dhanushkodi (58O08NE) have elongated extending further south-eastwards.

The shoreline change along the third sector comprising the Kaveri deltaic plain is significant with relatively large percentage of shoreline under accretion and erosion. Around 44 km of the coast is eroding, 54 km is accreting and 63 km of the coast is stable in nature. Long stretch of shoreline from Kuttiyandavar (58M16SW) to Perunthottam (58M16NW) and Perrya Kuppam (58M14SW) to Thalangudi (58M13SW) are under erosion. Severe erosion is observed along the northern and southern spit at Pichavaram (58M15NW) (Plate 3).

Kodiakkadu (58N15SW), South of Kollidam River (58M15SW), Akkarapettai (58N14NW) are the other coastal segments that are under erosion. As in case of erosion, a long stretch of coast from Periyamuttagai (58N15NW) to Cheruturu (58N14NW) is accreting. Accretion of the coast is also significant at Samiyapettai (58M14SW).

Along the northern sector around 21 km of the coast is under erosion, 37 km have accreted and 141 km of shoreline is stable. Coastal erosion is significant along Mudaliyar Chavadi (58M13NW), Kannathur Reddykuppam (66D01SE), Pallikuppam (66C07NW), Nakkadoruvu (66C06SW). Severe erosion to the north of northern breakwater located near Karungali (66C07SW) is shown in Plate 4.

Table 1: Mapsheet-wise results of shoreline changes for 2004-06 and 2014-16 time-frame for the Tamil Nadu and Puducherry coast

Serial No.	Mapsheet No.	Erosion Area (in ha)	Erosion Length (in km)	Accretion area (in ha)	Accretion Length (in km)	Stable Length (in km)	Total Length (in km)
1	57P16NE	1.10	1.13	0.97	0.87	13.53	15.53
2	57P16SE	0.00	0.00	0.00	0.00	10.50	10.50
3	57P16SW	0.00	0.00	1.84	1.41	3.94	5.35
4	58H03SE	8.66	4.21	0.00	0.00	0.00	4.21
5	58H03SW	0.98	0.76	0.00	0.00	3.51	4.27
6	58H04NE	4.90	4.58	4.06	1.66	7.07	13.32
7	58H08NW	4.22	3.34	3.45	0.44	5.51	9.29
8	58H08SE	0.00	0.00	5.72	2.68	11.50	14.19
9	58H08SW	2.91	2.12	1.35	1.36	2.52	6.00
10	58H12NE	0.97	0.73	2.29	1.72	12.31	14.76
11	58H12NW	0.17	0.12	1.73	0.97	6.44	7.53
12	58H12SW	4.38	2.22	1.81	0.73	8.69	11.64
13	58H15SE	6.04	3.29	38.57	8.12	6.00	17.41
14	58H15SW	1.91	0.65	1.62	2.04	2.47	5.15
15	58H16NW	1.17	0.75	2.77	1.82	10.36	12.93
16	58K08NE	1.47	1.38	0.78	0.92	2.24	4.55
17	58K08SE	2.42	1.65	1.33	1.49	6.88	10.02
18	58K08SW	12.12	6.65	3.17	0.78	5.88	13.31
19	58K12NE	6.17	3.37	15.39	6.79	10.36	20.52
20	58K12NW	0.38	0.28	13.99	7.51	6.82	14.61
21	58K14NE	0.43	0.29	0.14	0.18	7.37	7.84
22	58K14SE	0.00	0.00	0.13	0.13	6.02	6.14
23	58K15NE	0.00	0.00	1.50	1.91	13.35	15.25
24	58K15SE	1.77	2.00	3.77	2.81	14.62	19.43
25	58K15SW	1.37	1.79	0.78	0.62	0.00	2.41
26	58K16NE	0.17	0.18	0.00	0.00	0.00	0.18
27	58K16NW	0.93	0.90	0.30	0.46	11.38	12.74
28	58L01NE	0.74	0.84	3.71	2.19	10.05	13.09
29	58L01SE	3.17	1.87	8.42	3.11	7.51	12.49
30	58L02NE	16.88	6.18	38.52	8.30	3.61	18.10
31	58L02SE	3.17	0.71	11.84	6.35	4.54	11.59
32	58L02SW	0.00	0.00	11.44	2.98	0.00	2.98
33	58L03NE	0.00	0.00	0.00	0.00	1.60	1.60
34	58L03NW	2.30	1.50	10.27	4.80	8.93	15.23
35	58L03SW	0.30	0.36	10.94	6.17	2.37	8.90
36	58L05NW	3.05	1.54	0.00	0.00	0.00	1.54
37	58M13NW	5.68	3.04	11.73	3.89	7.45	14.38
38	58M13SW	3.51	2.58	4.47	2.67	9.18	14.43
39	58M14NW	15.09	7.19	7.39	3.88	3.15	14.23

40	58M14SW	5.70	2.56	20.75	9.38	1.98	13.92
41	58M15NW	52.73	9.07	6.89	3.58	2.03	14.69
42	58M15SW	14.61	2.09	4.21	0.93	9.24	12.26
43	58M16NW	21.99	7.08	1.28	0.58	4.81	12.46
44	58M16SW	23.13	6.80	0.62	0.62	3.74	11.15
45	58N04SE	0.00	0.00	1.19	1.73	5.73	7.46
46	58N07SW	0.28	0.14	1.65	1.48	7.65	9.27
47	58N08NW	0.65	0.47	0.00	0.00	4.39	4.87
48	58N08SW	0.00	0.00	1.41	0.89	3.35	4.24
49	58N11SE	4.42	1.47	0.30	0.15	0.37	1.98
50	58N13NW	0.00	0.00	8.92	5.02	7.68	12.70
51	58N13SW	1.54	0.96	7.12	2.57	5.41	8.94
52	58N14NW	1.39	0.86	13.18	3.76	9.27	13.88
53	58N14SW	0.00	0.00	31.69	12.58	0.15	12.72
54	58N15NW	1.44	0.54	7.84	6.32	4.99	11.85
55	58N15SE	0.58	0.23	2.81	1.58	0.78	2.59
56	58N15SW	9.44	3.48	5.23	1.39	6.15	11.02
57	58O01NE	0.00	0.00	1.38	1.59	14.69	16.28
58	58O01NW	0.00	0.00	0.00	0.00	0.61	0.61
59	58O01SW	0.21	0.20	1.41	1.20	11.34	12.74
60	58O02NW	0.33	0.25	0.00	0.00	3.95	4.20
61	58O03SE	4.99	3.02	12.84	3.88	19.80	26.70
62	58O03SW	11.93	4.98	8.60	4.01	20.85	29.83
63	58O07SW	0.81	0.32	4.86	1.87	18.10	20.28
64	58O08NE	0.00	0.00	11.47	1.95	7.69	9.64
65	58O08NW	0.00	0.00	0.00	0.00	10.65	10.65
66	66C06SW	8.39	3.24	0.37	0.80	3.29	7.33
67	66C07NW	26.61	3.27	21.12	7.77	3.69	14.74
68	66C07SW	40.70	4.23	23.74	2.67	2.84	9.74
69	66C08NW	2.53	0.43	8.36	2.55	10.90	13.89
70	66C08SW	0.00	0.00	11.90	2.82	9.88	12.70
71	66D01SE	1.71	2.03	0.99	0.52	7.10	9.66
72	66D02NE	0.00	0.00	3.51	2.60	12.04	14.65
73	66D02SE	0.48	0.41	10.45	5.95	8.78	15.14
74	66D03NE	0.00	0.00	0.00	0.00	6.00	6.00
75	66D03NW	0.00	0.00	0.00	0.00	6.25	6.25
76	66D03SW	0.00	0.00	5.73	2.49	11.85	14.34
77	66D04NW	0.41	0.55	0.00	0.00	0.52	1.08
78	66D05NW	1.13	0.69	2.54	1.46	11.99	14.14
79	66D05SW	1.69	1.31	0.13	0.15	3.38	4.84
<b>Total</b>		<b>358.3</b>	<b>128.9</b>	<b>470.7</b>	<b>188.6</b>	<b>531.6</b>	<b>849.07</b>

## Andhra Pradesh

The Andhra Pradesh coast is located to the eastern coast of India facing the Bay of Bengal. The coast is characterized by spits, wide beaches, mangroves, mudflats, bars, barriers, lagoons, sand dunes, salt pans, etc. The Krishna and the Godavari are the prominent rivers that form large deltaic regions. Both these deltas have large mangrove forests. The Pulicat lagoon, located at southeastern end of Andhra Pradesh, is the second largest lagoon of India.

The shoreline change of Andhra Pradesh is estimated for 810 km (which does not include the mouth of the river/estuary, creeks and their inner parts). The change analysis have avoided the coastal segments at major ports and harbours. Accretion is observed along 208 km of the coastal length and coast of about 189 km is eroding,

while 413 km of Andhra Pradesh shoreline is stable (Figure 2). Total area of about 796 ha have eroded between 2004-06 to 2014-16 whereas 808 ha area of coastal land have formed as a result of accretion. Details of the erosion/accretion status for the Andhra Pradesh coast at each SOI grid is given in Table 2.

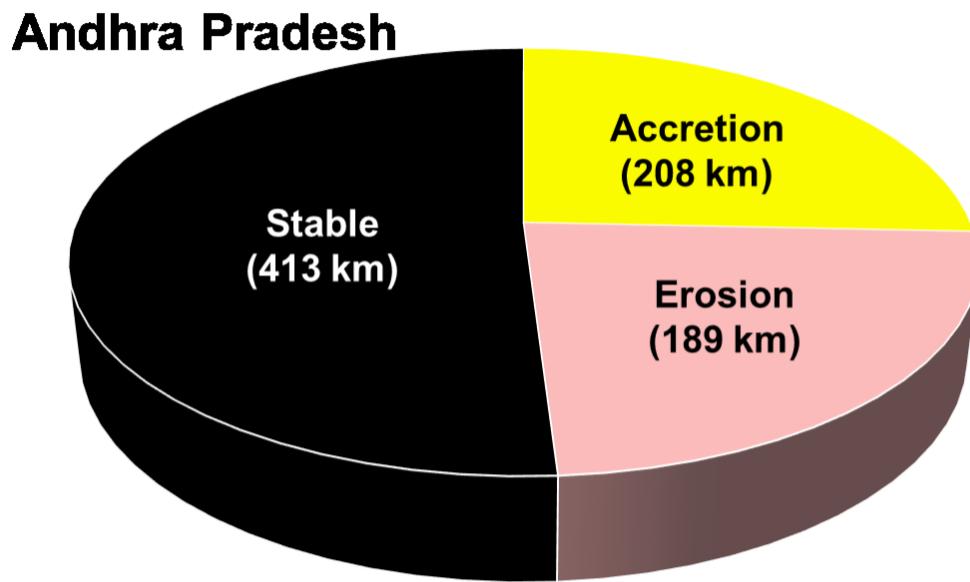


Figure 2: Shoreline change status of the Andhra Pradesh coast

Further analysis is carried out by dividing the Andhra Pradesh coast into three sectors based on the coastal feature and district boundary. The Nellore and Prakasham Districts forms the southern sector. The second sector is along the coasts of Krishna and Godavari Delta that comprises the districts of Guntur, Krishna, West Godavari and East Godavari. The third sector is located to the north of Andhra Pradesh that includes the shoreline along Visakhapatnam, Vizianagaram and Srikakulam Districts.

The southern sector has coastal erosion along 35 km and accretion along 80 km of the coastal stretch. Around 134 km of the shoreline is observed to be stable.

The change in coastal orientation have resulted in sequence of accreting and eroding shoreline at Samatiyalakuppam (66C01SE and 66C05SW) (Plate 5). The severe erosion of the mouth to the north of Upputeru Canal (66A09SW) is shown in Plate 6. Eroding coast are observed along the stretch between Pattapalem (66B02NW) to Annagaripalem (66B01SW) and at Adullapalem (66B03SE), Pattapupalem (66B02SE), Pallepalem (66A04NW) and to the east of Tungabhadra Canal (66A09NE).

The second sector comprising the Krishna and Godavari delta have undergone significant shoreline changes, where erosion is estimated along 72 km and accretion is along 109 km of the shoreline. The sector have the smallest length of stable shoreline, which is about 57 km. The mouth of Godavari Delta have shown peculiar pattern of eroding and accreting shorelines. Plate 7 shows erosion to the north

of Godavari River (65H11SE). A long coastal stretch from Vadalareva (65H15NE) to Komaragiripatnam (65L03NW) and Aminubada (65K08SW) to Danyapeta (65K08NE) is under severe erosion. The other coastal segments under erosion is along the spit near Pedda Karameda (65H04NE), to the northern bank of Upputeru River (65H07SE), Mailavanilanka (65H11SE), south of Godavari River mouth near Gogul Lanka (65L06NW). A large change is observed to the Kakinada spit (65L05SW and 65L05NW) that have undergone a lateral shift to its east and accretion to the northern end.

The northern sector consists of rocky coastline and around 223 km of the shoreline is stable in nature. The coastal length of around 82 km have eroded while accretion is along 19 km of the coast. Coastal stretch of around 50 km to the north of Waltair Beach in Visakhapatnam (65O06NW) to Kollayavalasa (65N12SW) have undergone erosion. Plate 8 shows erosion to the north of Gosthani River (65O05NE). Erosion are observed to the mouth of Nagavali River (65N16NE), Vamsadhara River (74B03SE) and Mahendra Tanaya River (74B09SW). The other eroding coastal segments are at Kumarapuram (65K11SW), Sitapalem (65K15NE), Koyyam (65N16NW), Manchinillapenta and Chinna Kotturu (74B06NE), Singaaputtuga (74B09SW), south of Sompeta (74B09NE and 74B09NW) and Donkurl (74A12SE).

Table 2: Mapsheet-wise results of shoreline changes for 2004-06 and 2014-16 time-frame for the Andhra Pradesh coast

Serial No.	Mapsheet No.	Erosion Area (in ha)	Erosion Length (in km)	Accretion area (in ha)	Accretion Length (in km)	Stable Length (in km)	Total Length (in km)
1	65H03SE	0.00	0.00	9.49	1.10	0.00	1.10
2	65H04NE	29.97	3.01	49.64	11.12	0.00	14.13
3	65H04SE	7.80	0.92	1.56	0.86	0.00	1.79
4	65H07SE	19.35	2.64	69.39	12.06	0.78	15.48
5	65H07SW	0.00	0.00	28.10	6.90	10.06	16.96
6	65H11SE	84.77	9.40	0.00	0.00	1.05	10.45
7	65H11SW	1.32	1.14	25.96	4.87	5.32	11.34
8	65H15NE	68.15	6.79	16.37	4.69	2.32	13.80
9	65H15NW	0.00	0.00	8.62	1.98	0.00	1.98
10	65H15SW	22.03	4.27	32.29	8.62	0.00	12.88
11	65K08NE	28.88	16.12	0.00	0.00	0.00	16.12
12	65K08SE	6.89	1.93	0.00	0.00	0.00	1.93
13	65K08SW	15.60	4.55	17.23	3.14	2.21	9.90
14	65K11SE	0.00	0.00	0.00	0.00	15.04	15.04
15	65K11SW	8.67	3.64	0.56	0.47	6.02	10.14
16	65K12NW	0.00	0.03	0.00	0.00	5.76	5.78
17	65K15NE	5.00	1.83	0.00	0.00	14.05	15.88
18	65K15NW	0.49	0.32	1.07	0.36	12.11	12.79
19	65K15SW	0.00	0.00	0.00	0.00	2.43	2.43
20	65L02SE	0.00	0.00	49.89	9.85	2.17	12.01
21	65L03NE	1.67	0.19	0.00	0.00	2.23	2.42
22	65L03NW	21.02	3.80	0.00	0.00	10.93	14.73
23	65L05NW	39.24	7.17	97.09	13.93	0.00	21.10
24	65L05SW	13.44	2.59	7.16	2.43	0.00	5.03

25	65L06NW	27.82	2.81	47.99	5.77	0.34	8.92
26	65L06SW	20.81	1.19	1.99	1.00	0.00	2.19
27	65N12NE	0.00	0.00	0.00	0.00	0.89	0.89
28	65N12SE	2.56	1.62	0.21	0.15	12.96	14.73
29	65N12SW	14.06	6.90	0.84	0.21	1.33	8.44
30	65N16NE	7.92	0.97	31.41	8.59	5.20	14.76
31	65N16NW	5.60	2.17	0.05	0.34	12.81	15.31
32	65O02NE	0.00	0.00	1.25	0.57	0.48	1.05
33	65O02SE	3.91	1.74	0.00	0.00	13.49	15.23
34	65O02SW	1.28	0.25	0.68	0.32	13.19	13.76
35	65O03NW	0.00	0.00	0.00	0.00	2.22	2.22
36	65O05NE	24.68	7.36	0.00	0.79	0.51	8.67
37	65O05SE	38.73	11.25	0.00	0.19	4.92	16.36
38	65O05SW	7.20	3.19	0.00	0.00	0.37	3.56
39	65O06NW	11.09	3.92	0.00	0.00	11.29	15.21
40	65O09NW	17.52	10.10	0.00	0.00	0.91	11.01
41	66A02NE	0.00	0.00	0.93	0.67	0.00	0.67
42	66A02SE	1.77	1.11	14.47	3.89	5.30	10.30
43	66A03NE	4.87	1.28	8.13	2.52	12.89	16.69
44	66A03SE	0.00	0.00	0.00	0.00	0.41	0.41
45	66A03SW	2.97	0.81	0.00	0.00	9.95	10.76
46	66A04NW	20.03	3.95	1.43	0.74	6.36	11.05
47	66A04SW	0.75	0.77	0.00	0.00	12.36	13.13
48	66A05SE	0.00	0.00	1.99	1.27	13.07	14.35
49	66A05SW	0.00	0.00	11.00	3.94	0.00	3.94
50	66A06NW	1.91	0.35	13.21	5.73	6.94	13.02
51	66A09NE	14.71	0.65	24.90	10.06	0.33	11.04
52	66A09SE	0.00	0.00	8.30	2.43	0.13	2.56
53	66A09SW	16.79	2.15	15.50	7.49	3.13	12.77
54	66A13SW	0.00	0.00	0.62	0.27	0.00	0.27
55	66A14NE	0.14	0.19	0.00	0.00	2.88	3.06
56	66A14NW	3.13	0.39	0.00	0.00	0.34	0.73
57	66B01NW	0.00	0.00	1.24	0.43	13.99	14.42
58	66B01SW	24.37	7.46	2.59	0.49	4.38	12.33
59	66B02NE	4.30	2.32	22.76	9.67	1.10	13.10
60	66B02NW	5.79	1.05	7.02	1.86	0.00	2.91
61	66B02SE	14.54	2.58	18.62	3.15	7.70	13.43
62	66B03NE	0.00	0.00	1.22	1.32	12.36	13.68
63	66B03SE	9.07	4.08	9.33	2.03	8.00	14.11
64	66B04NE	2.18	0.63	28.09	7.91	5.57	14.11
65	66B04SE	6.70	1.29	20.29	8.69	2.54	12.52
66	66C01NE	0.00	0.00	9.37	6.99	8.17	15.16
67	66C01SE	15.33	4.94	6.71	3.15	3.91	12.00
68	66C02NE	0.00	0.00	22.58	9.29	4.70	13.99
69	66C02SE	0.00	0.00	2.06	2.25	0.78	3.02
70	66C05SW	2.44	0.92	4.67	1.40	0.00	2.32
71	66C06SW	0.76	1.15	2.91	2.82	0.67	4.64
72	74A12SE	8.24	3.76	0.00	0.00	4.14	7.90
73	74A16SW	3.05	1.44	0.00	0.00	0.47	1.90
74	74B03NE	3.13	1.23	0.00	0.00	13.64	14.86
75	74B03SE	34.56	4.24	36.45	4.19	0.69	9.12
76	74B03SW	3.58	0.50	0.00	0.00	13.54	14.04
77	74B04NW	1.30	0.32	0.66	0.23	0.99	1.54
78	74B06NE	9.89	3.12	0.76	0.22	13.40	16.74
79	74B06SE	0.00	0.00	0.00	0.00	3.63	3.63
80	74B06SW	0.00	0.00	9.09	2.04	13.34	15.37
81	74B07NW	0.00	0.00	0.00	0.00	4.83	4.83
82	74B09NE	4.57	2.96	0.90	0.27	9.85	13.07
83	74B09NW	10.11	5.07	1.02	0.29	0.29	5.65
84	74B09SW	7.22	4.43	0.22	0.14	12.86	17.43
85	74B10NW	0.00	0.00	0.00	0.00	0.31	0.31
	<b>Total</b>	<b>795.7</b>	<b>188.9</b>	<b>807.9</b>	<b>208.2</b>	<b>413.3</b>	<b>810.4</b>

## **5. END USE**

Coastal management plans require a proper understanding of the coastal processes and coastal dynamics to achieve a sustainable development along the coastal region. The inventory of shoreline change is the pre-requisite in understanding the dynamics of the coastal region. As the Indian coastal regions are modified by mounting development activities, an improper management at times shall lead to severe coastal erosion. Planning measures for sustainable development along the coastal region require a systematic inventory of shoreline changes occurring along the entire Indian coast on 1: 25,000 scale.

The Atlas can be used as a reference material for obtaining information on status of shoreline changes during 2004-06 and 2014-16 time-frames along entire Indian coastline. Areas under coastal erosion and status of coastal protection measures taken up by respective maritime State and Union Territory are depicted and can be used for planning coastal protection measures.

The Atlas is extremely useful to Coastal Management Directorate, Central Water Commission for providing guidance towards coastal protection works in maritime states of India.

All the State Public Works Departments, Ports and Harbour Authorities, Coastal Regulation Zone Authorities shall be able to have better management of the shorelines in respective states.

## **ACKNOWLEDGEMENTS**

We would like to place on record our deep sense of gratitude to Shri Shri N. M. Desai, Director, Space Applications Centre, Ahmedabad for supporting this as an important activity. We are highly grateful to Dr. Raj Kumar, Director, NRSC, Hyderabad for providing guidance, encouragement and support for this work. We are thankful to Dr. I. M. Bahuguna, Deputy Director, Earth, Ocean, Atmosphere, Planetary Sciences and Applications Area (EPSA) and Dr. R. P. Singh Group Director, Geo-Sciences, Hydrology, Cryosphere Sciences & Applications Group (GHCAG) for coordinating the work of preparation of these Atlases.

We express special thanks to the Chairman and Members of Coastal Protection and Development Advisory Committee (CPDAC) for necessary support. We express deep gratefulness to the Director, Coastal Management Directorate, Central Water Commission, Ministry of Water Resources for his full support for this work and in organizing collection of coastal protection measures data from all the maritime States and U.T. of India.

We are highly grateful to the quality check team Shri T.V.R Murthy, Shri J.G Patel, Shri R.J Bhandari, Shri B.P Rathore and Shri Manish Parmar for meticulously checking the shoreline change database and giving invaluable suggestion towards improving the same. We express our sincere gratitude to Ms. Savita Kumari and Ms. Anupama Sahoo for helping us in the map composition and database management.

Project team  
Shoreline Change Atlas

## REFERENCES

Nayak, S. R., Bahuguna, A., Shaikh, M., Rao, R. S., Trivedi, C. R., Prasad, K. N., Kadri, S. A., Vaidya, P. H., Patel, V. B., Oza, S. H., Patel, S. S., Rao, T. A., Shereiff, A. N. and Suresh, P. V., 1991, *Manual for mapping of coastal wetlands/landforms and shoreline changes using satellite data: Technical Note*, IRS-UP/SAC/MCE/TN/32/91 (Space Applications Centre, Ahmedabad), 63 p.

NCSCM, 2015, Manual on demarcation of High Tide Line and Low Tide Line and preparation of CZMP of the Coast of India. NCSCM Technical Report Series, 23 B.

Rajawat, A. S., Chauhan, H.B., Ratheesh, R., Rode, S., Bhandari, R.J., Mahapatra, M., Mohit Kumar., Yadav, R., Abraham, S.P., Singh, S.S., Keshri, K.N and Ajai, 2015. Assessment of coastal erosion along the Indian coast on 1: 25,000 scale using satellite data of 1989–1991 and 2004–2006 time frames. *Curr. Sci.*, 109(2), 347–353.

SAC, 2014, Shore Line Change Atlas of the Indian Coast, Six volumes, SAC/EPSA/GSAG/GSD/A/01/14, May, 2014

## **SHORELINE CHANGE MAPS**

# COMPLETE LEGEND TO SHORELINE CHANGE MAPS



EROSION



ACCRETION



HIGH-TIDE LINE 2014-16



HIGH-TIDE LINE 2004-06



STABLE



ROAD



RAILWAY



SEA WALL



GROYNES



BREAKWATER



JETTY



STATE BOUNDARY



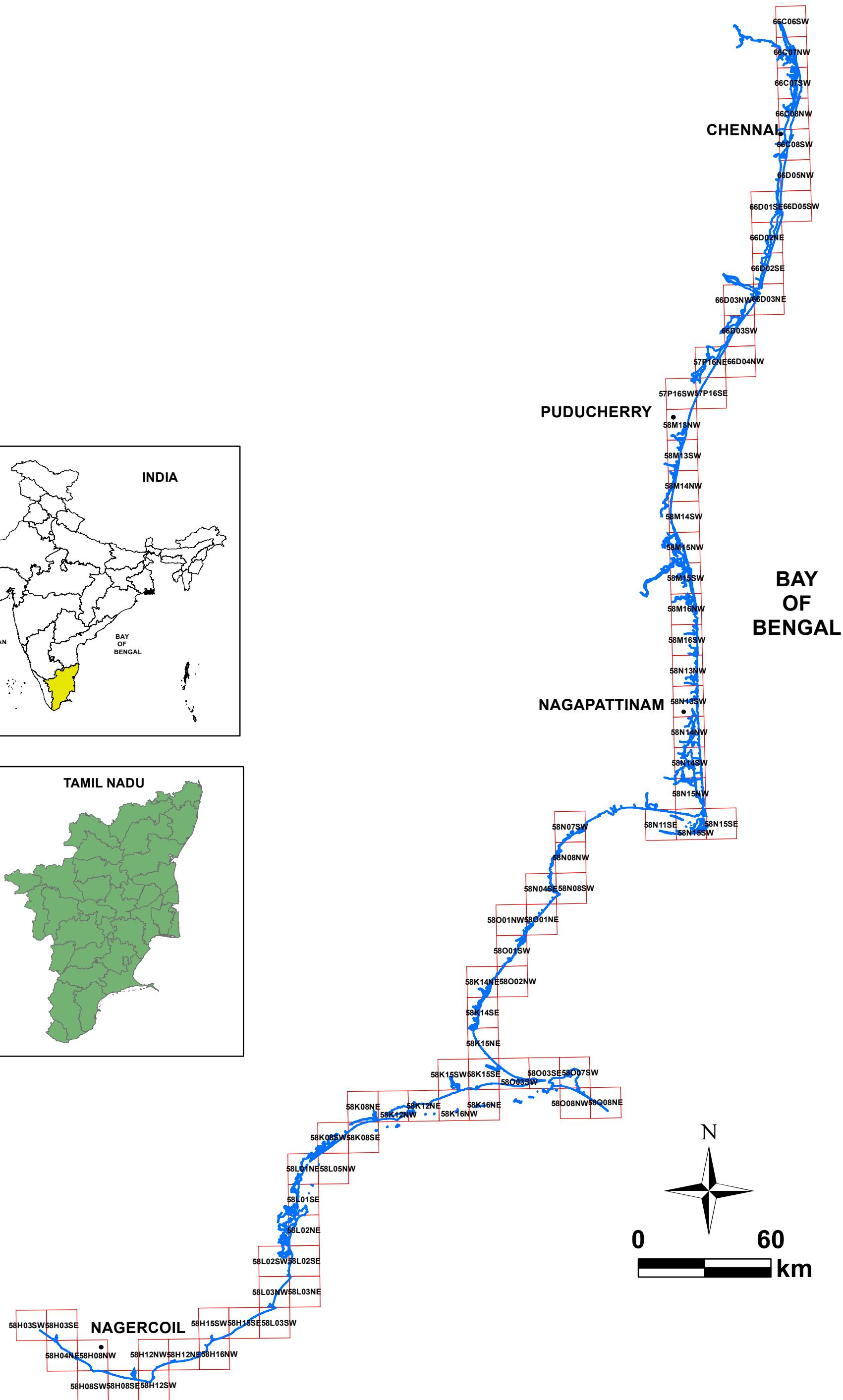
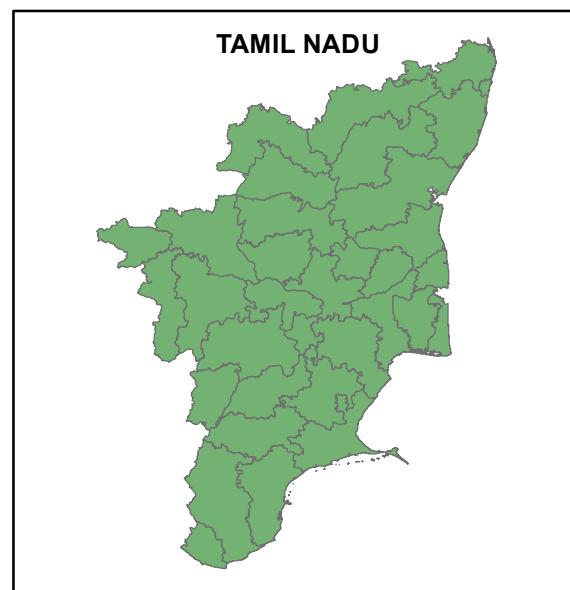
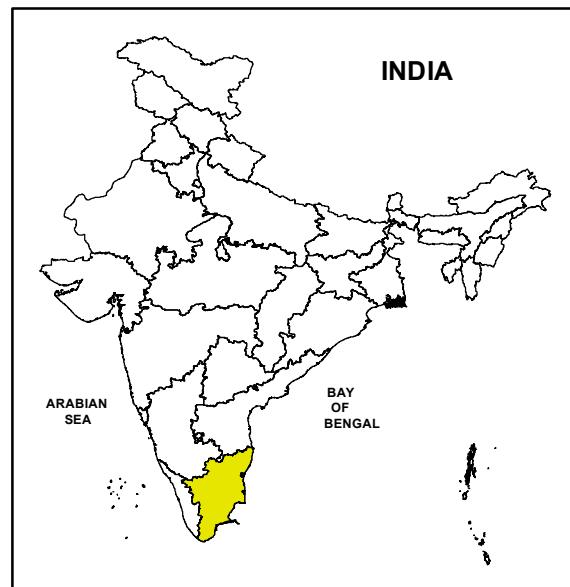
PORT/HARBOUR



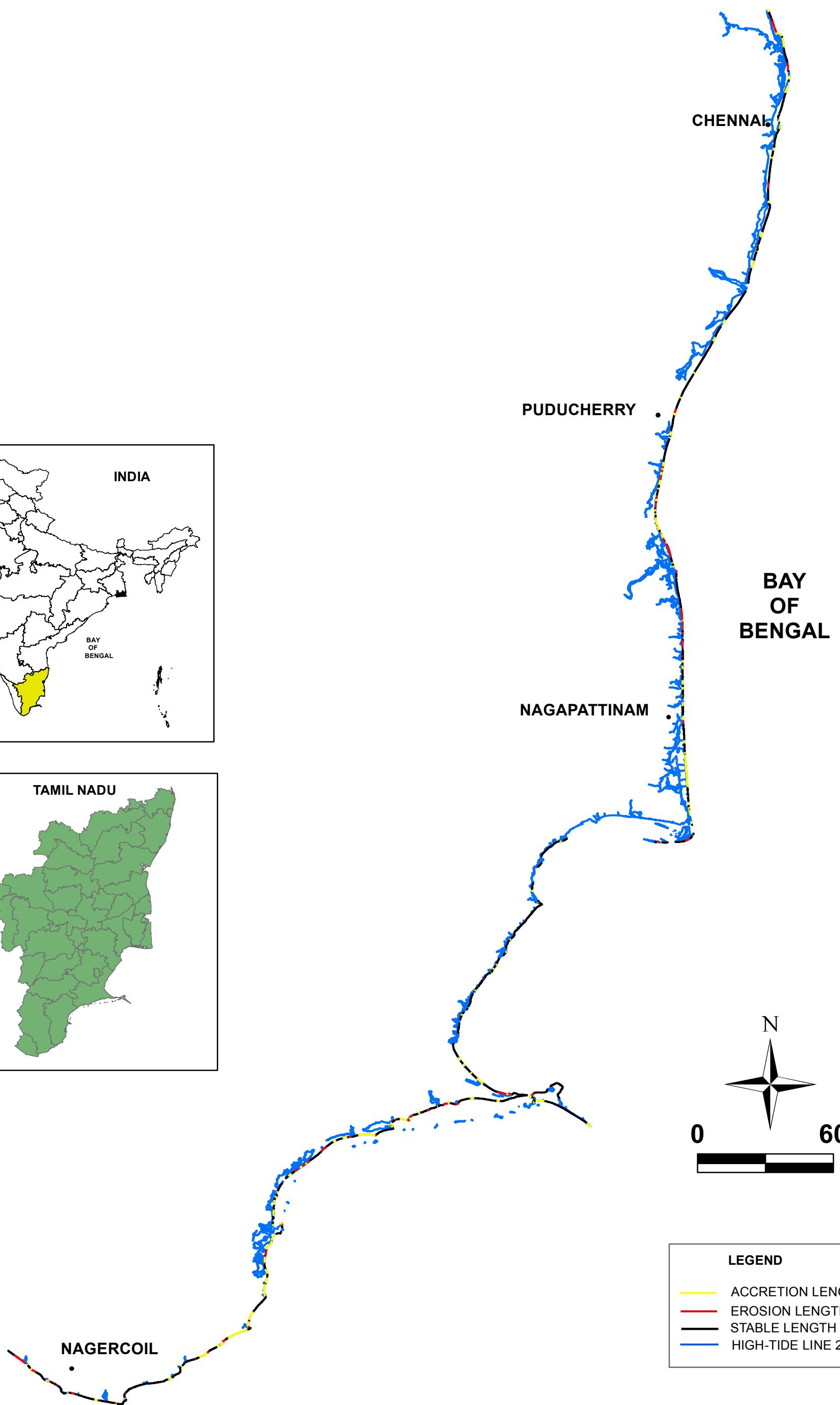
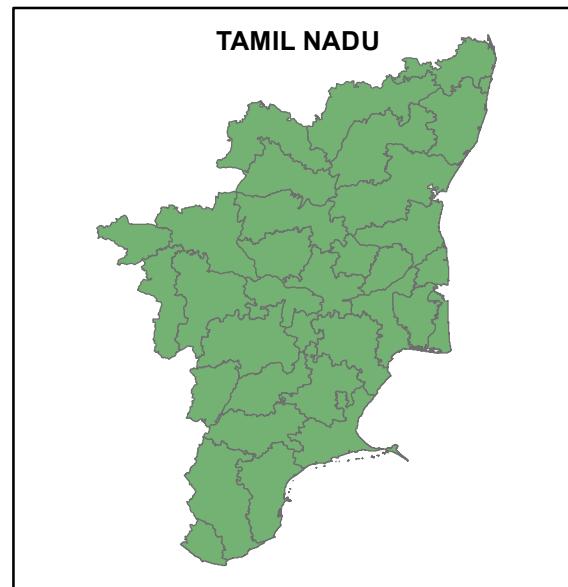
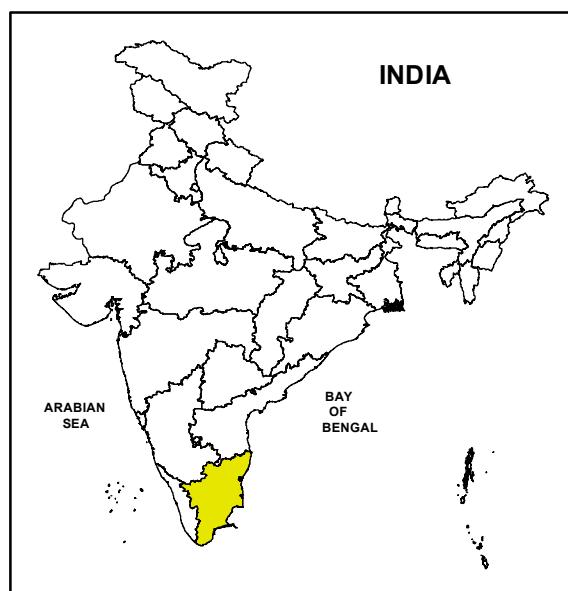
HABITATION

**SHORELINE CHANGE MAPS**  
**TAMIL NADU AND PUDUCHERRY**

# INDEX MAP OF TAMIL NADU



# SHORELINE CHANGES OF TAMIL NADU



**LEGEND**

- ACCRETION LENGTH
- EROSION LENGTH
- STABLE LENGTH
- HIGH-TIDE LINE 2014-16

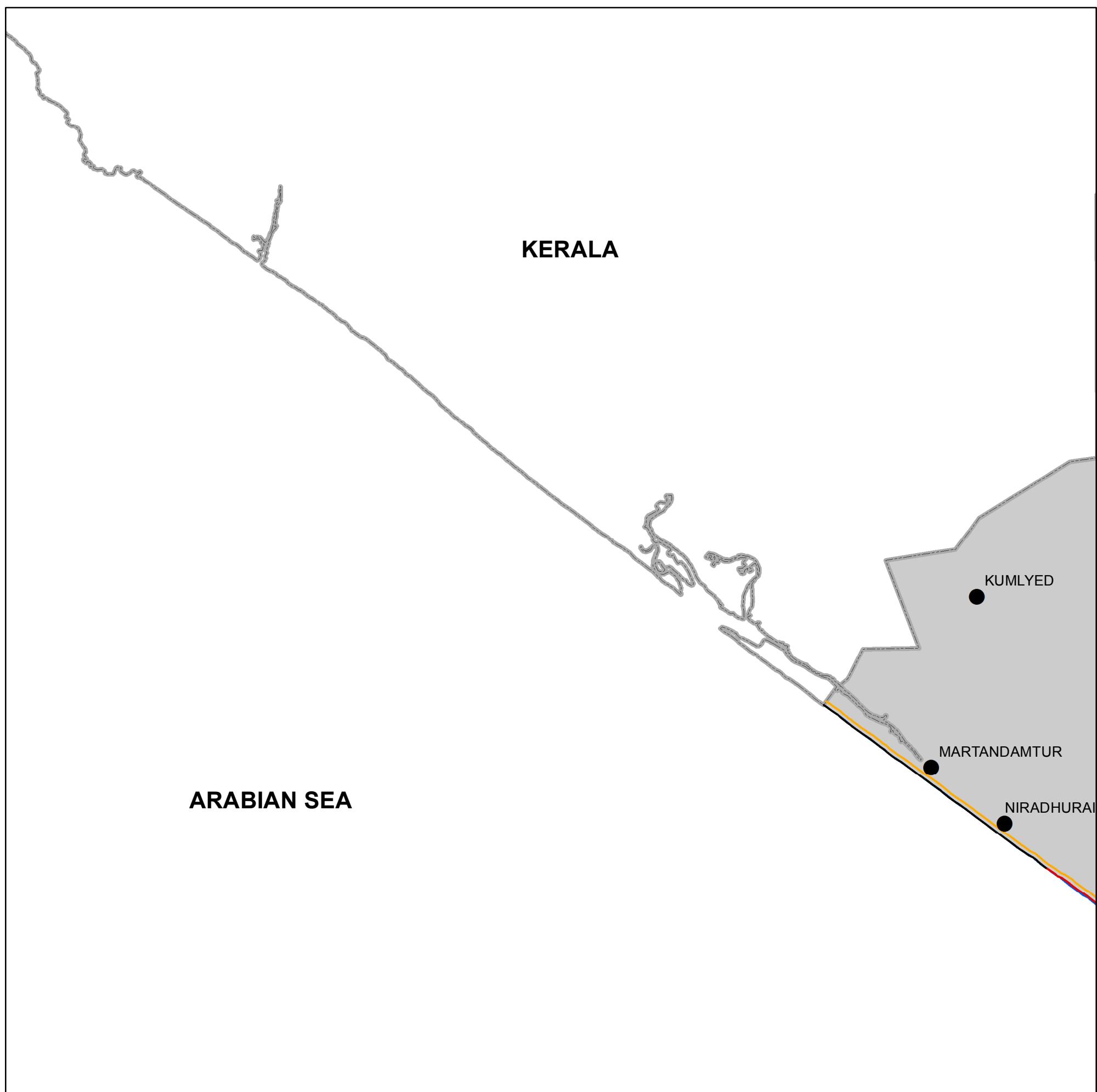
# SHORELINE CHANGE MAP

KANYAKUMARI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H03SW



## Legend

- EROSION (Red Box)
- HIGH-TIDE LINE 2014-16 (Green Line)
- HIGH-TIDE LINE 2004-06 (Blue Line)
- STABLE (Black Line)
- SEA WALL (Yellow Line)
- STATE BOUNDARY (Dashed Line)
- HABITATION (Black Circle)



0 2 km

INDEX TO SHEETS		
58D15NE	58H03NW	58H03NH
58D15SE	58H03SW	58H03SH
SEA	SEA	58H04NH



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



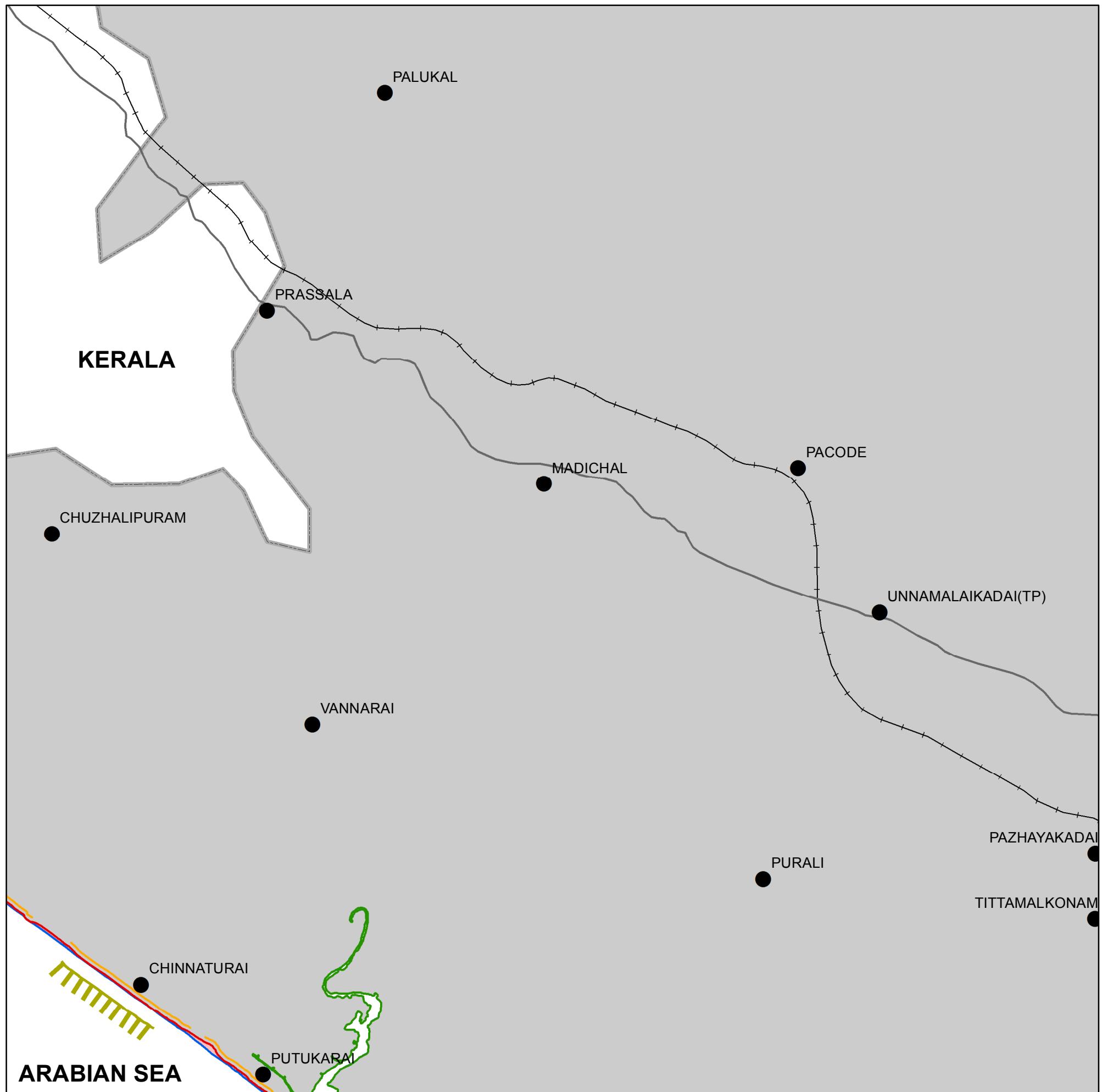
# SHORELINE CHANGE MAP

KANYAKUMARI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H03SE



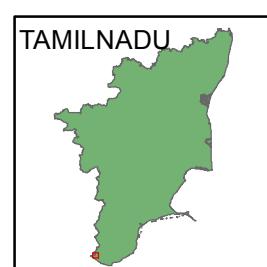
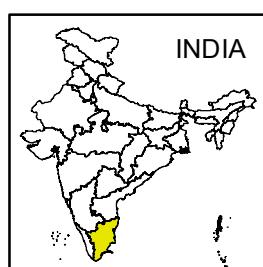
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- +—+ RAILWAY
- SEA WALL
- ||||| GROYNES
- STATE BOUNDARY
- HABITATION



0 2 km

58H03NW	58H03NH	58H07NW
58H03SW	58H03SH	58H07SW
SEA	58H04NH	58H08NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



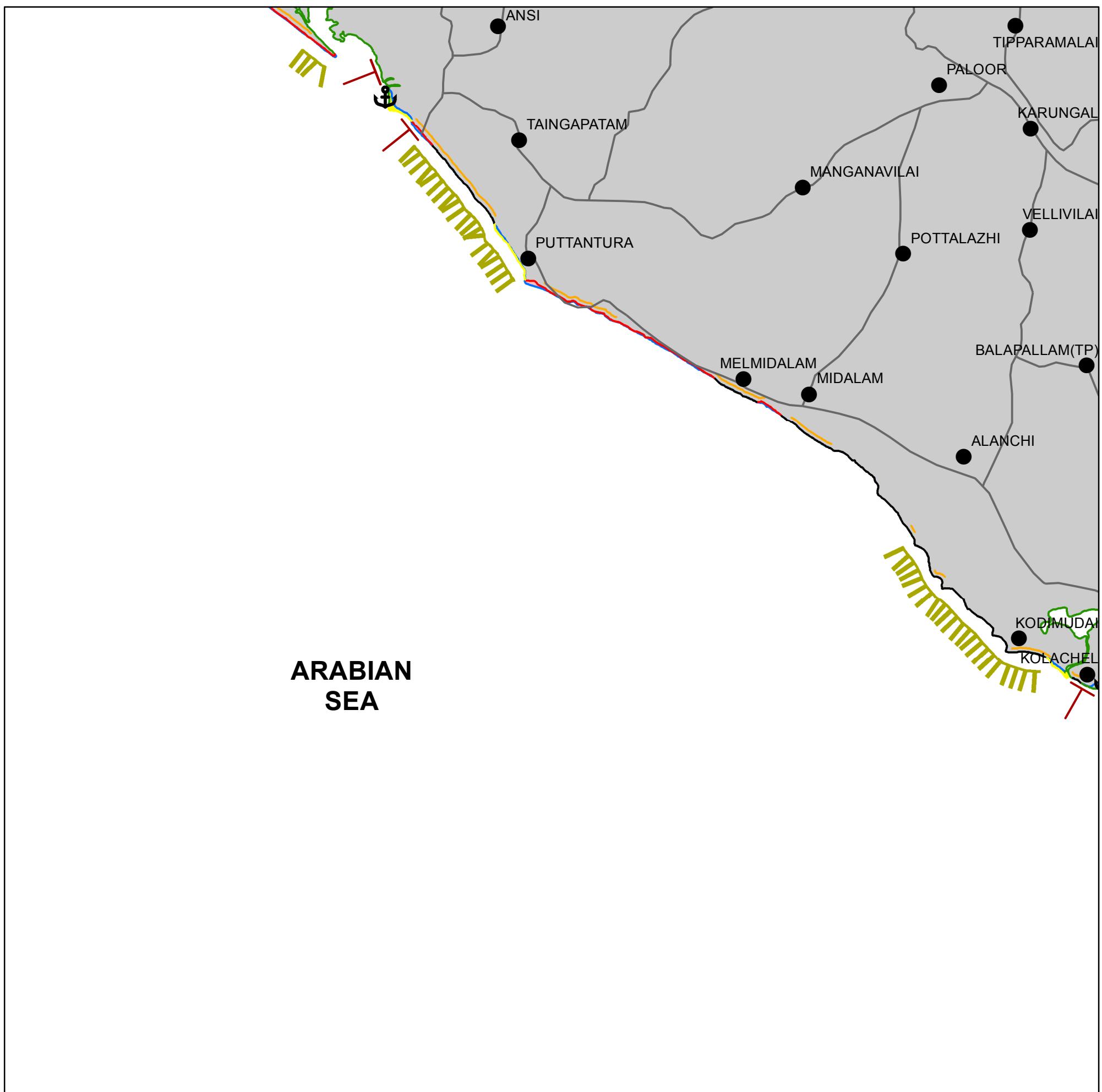
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KANNIYAKUMARI DISTRICT

TAMILNADU

SHEET NO. 58H04NE



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- ||||| GROYNES
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58H03SW	58H03SE	58H07SW
SEA	58H04NE	58H08NW
SEA	SEA	58H08SE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KANNIYAKUMARI DISTRICT

TAMILNADU

SHEET NO. 58H08NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



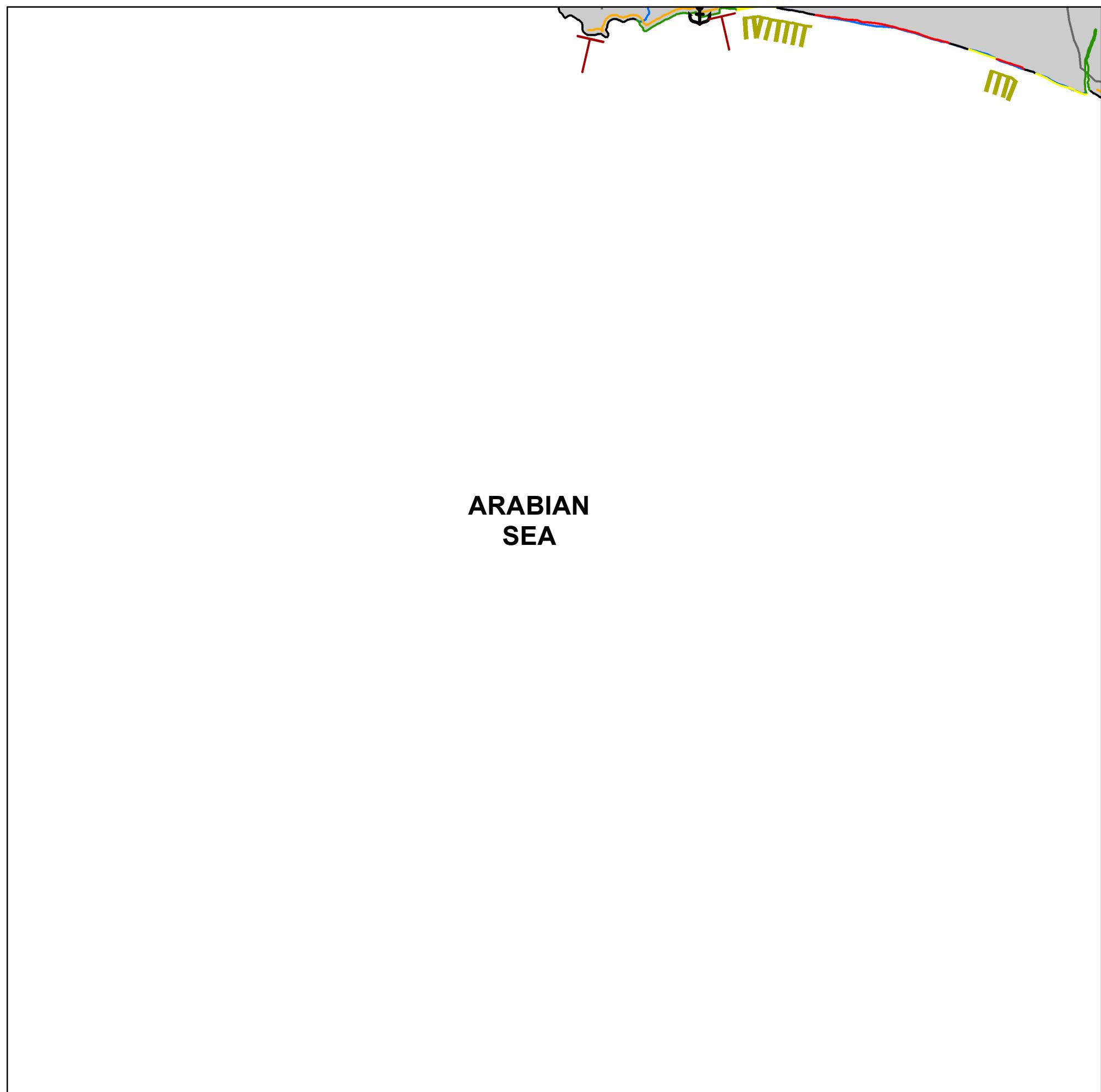
# SHORELINE CHANGE MAP

KANNIYAKUMARI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H08SW



## Legend

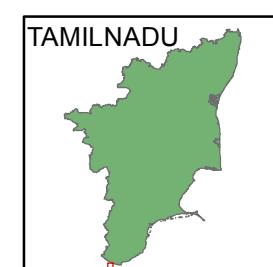
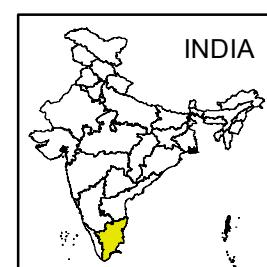
- █ EROSION
- █ ACCRETION
- █ HIGH-TIDE LINE 2014-16
- █ HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- GROYNES
- BREAKWATER
- PORT/HARBOUR



0 2 km

## INDEX TO SHEETS

58H04NE	58H08NW	58H08NE
58H04SE	58H08SW	58H08SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



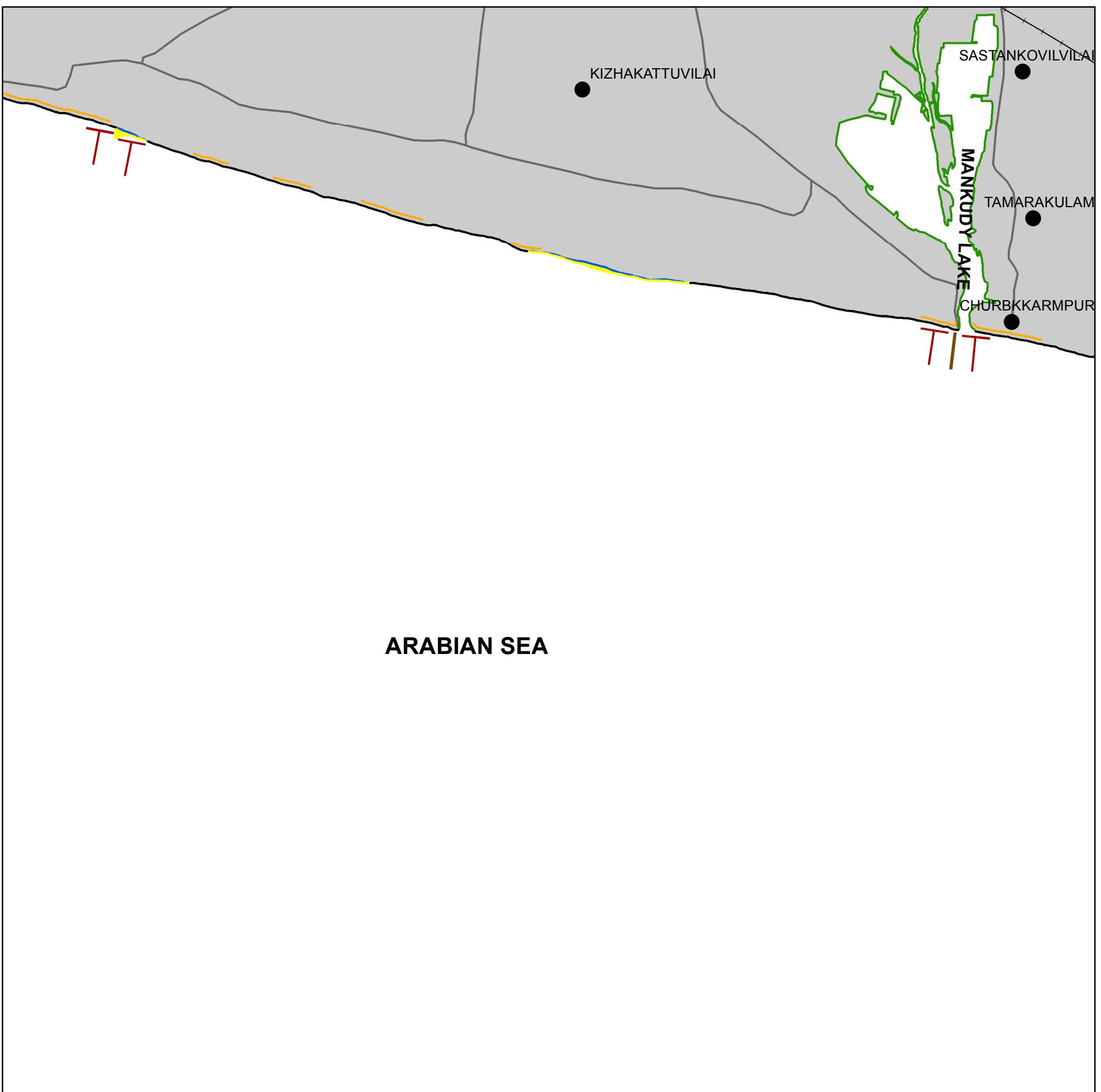
# SHORELINE CHANGE MAP

KANYAKUMARI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H08SE



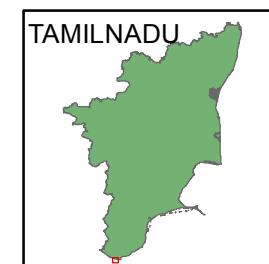
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- JETTY
- HABITATION



0 2 km

58H08NW	58H08NE	58H12NW
58H08SW	58H08SE	58H12SW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



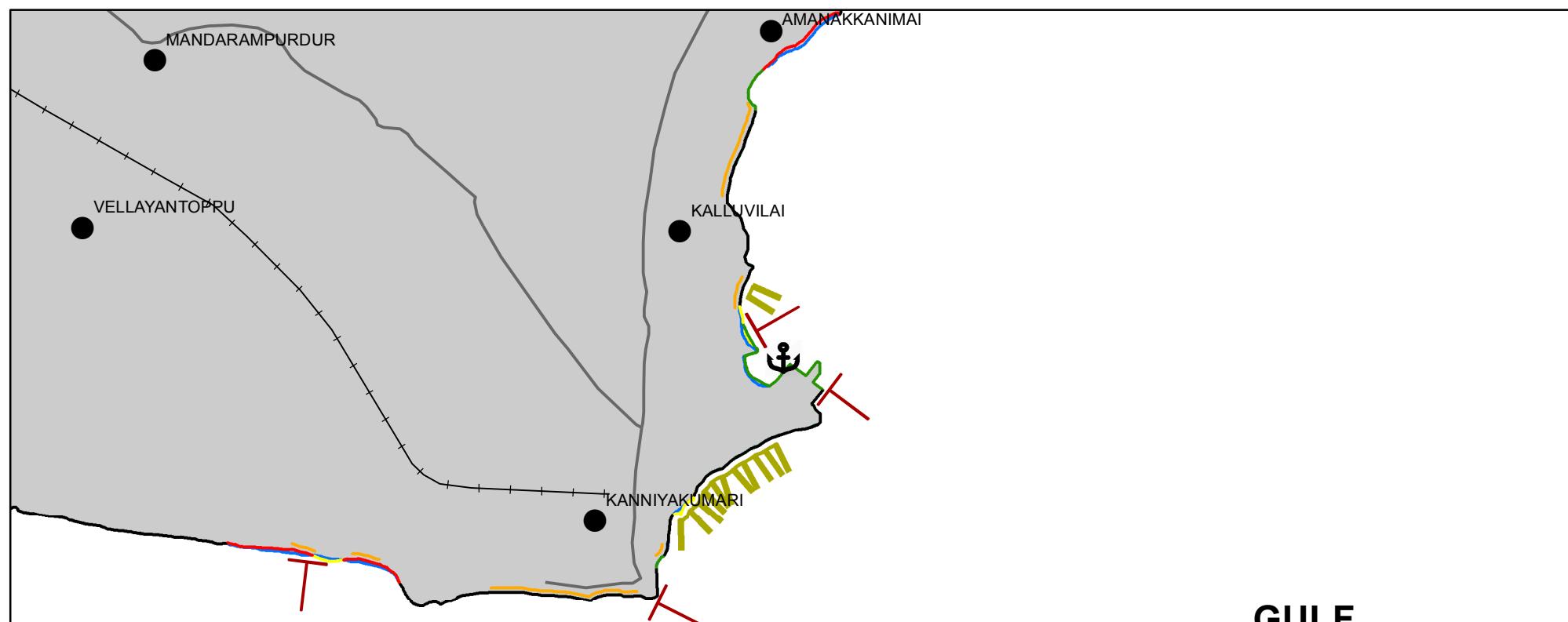
# SHORELINE CHANGE MAP

KANNIYAKUMARI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H12SW



GULF  
OF  
MANNAR

## Legend

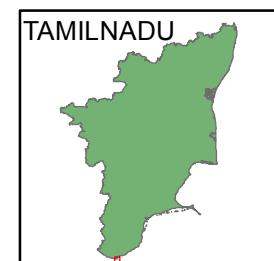
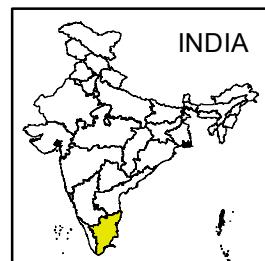
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- GROYNES
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58H08NE	58H12NW	58H12NE
58H08SE	58H12SW	58H12SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

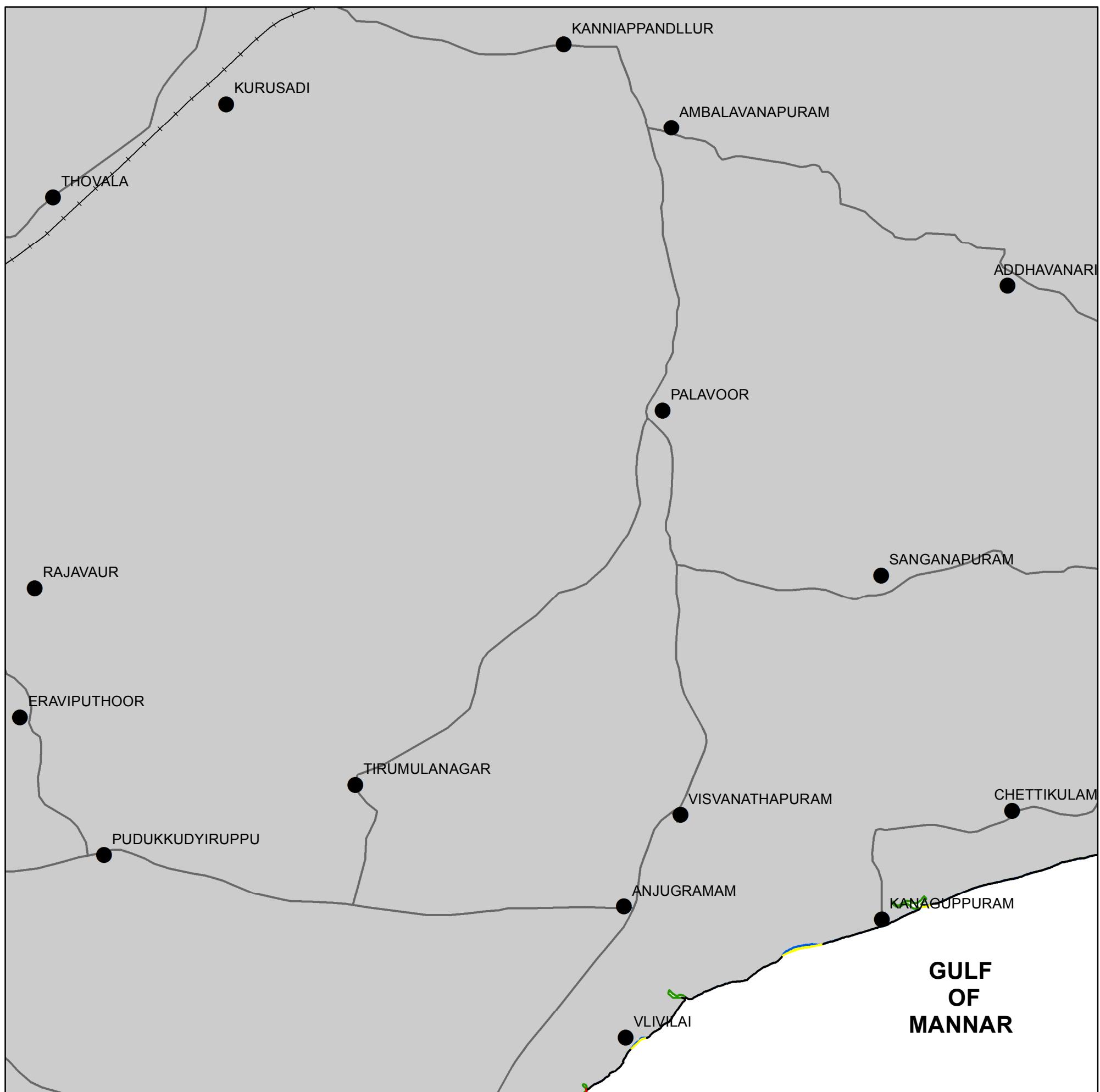


# SHORELINE CHANGE MAP

KANYAKUMARI AND  
TIRUNELVELI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY  
SHEET NO. 58H12NW



## Legend

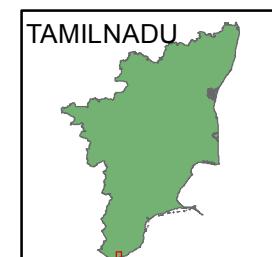
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58H07SE	58H11SW	58H11SE
58H08NE	58H12NW	58H12NE
58H08SE	58H12SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



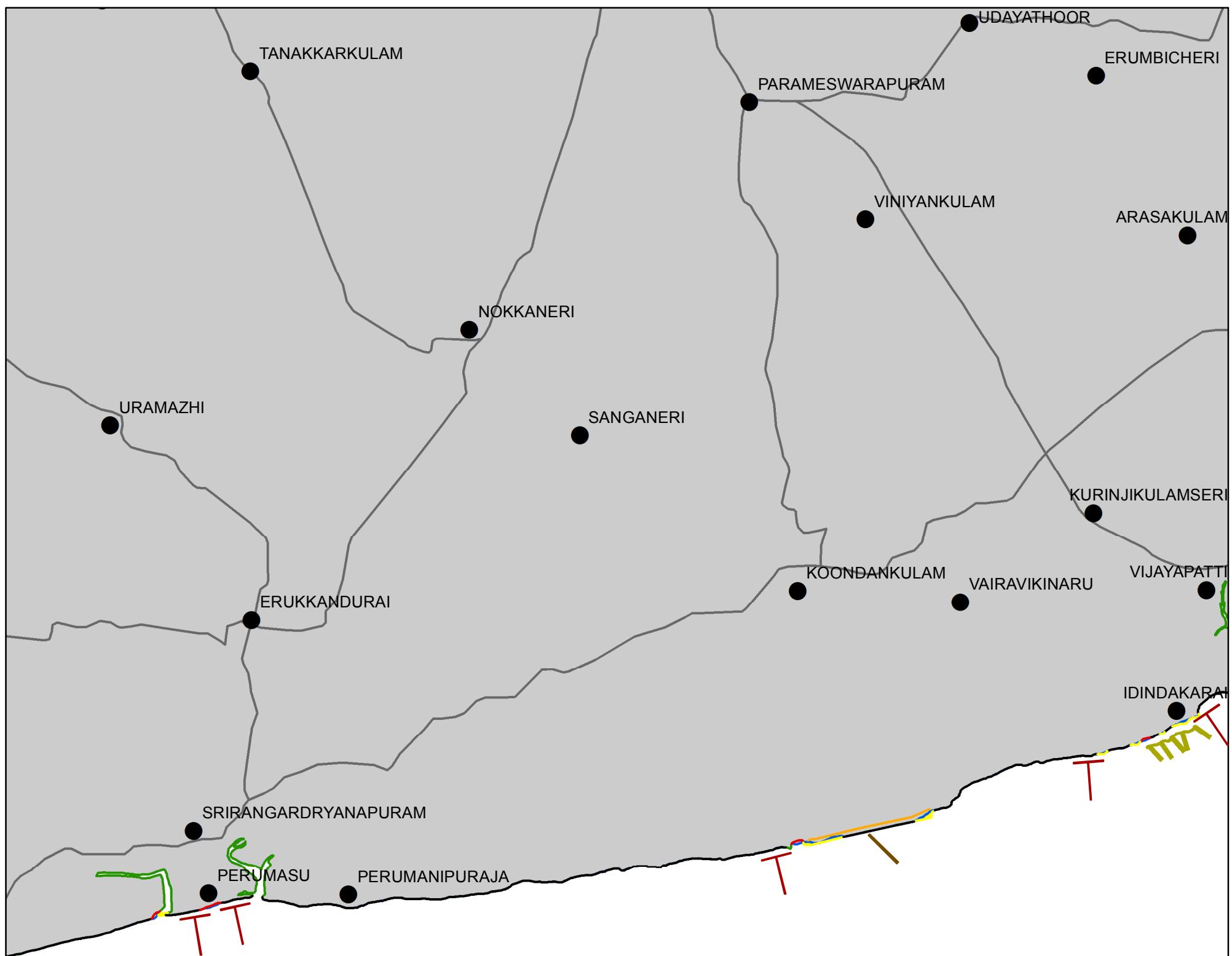
# SHORELINE CHANGE MAP

TIRUNELVELI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H12NE



GULF  
OF  
MANNAR

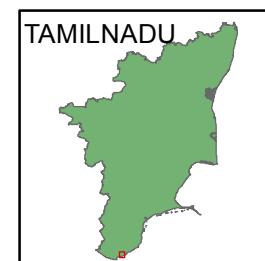
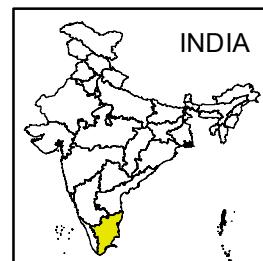
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- ||||| GROYNES
- T— BREAKWATER
- J— JETTY
- HABITATION



0 2 km

58H11SW	58H11SE	58H15SW
58H12NW	58H12NE	58H16NW
58H12SW	SEA	58H16SW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



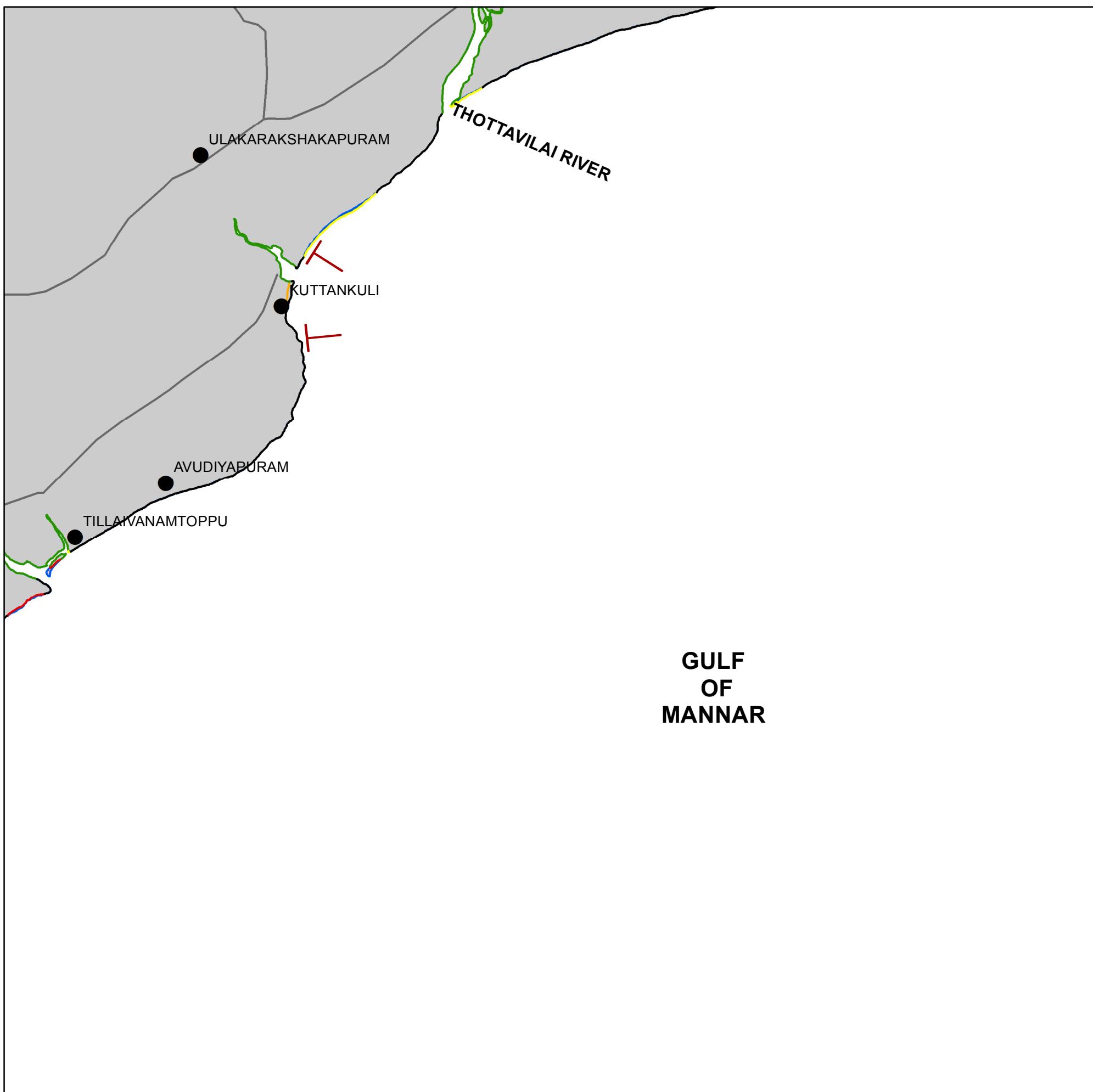
# SHORELINE CHANGE MAP

TIRUNELVELI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H16NW



## Legend

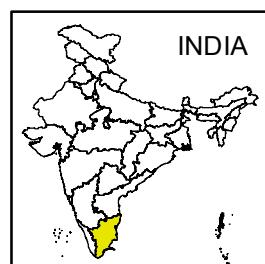
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

58H11SE	58H15SW	58H15SE
58H12NE	58H16NW	58H16NE
SEA	58H16SW	58H16SE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



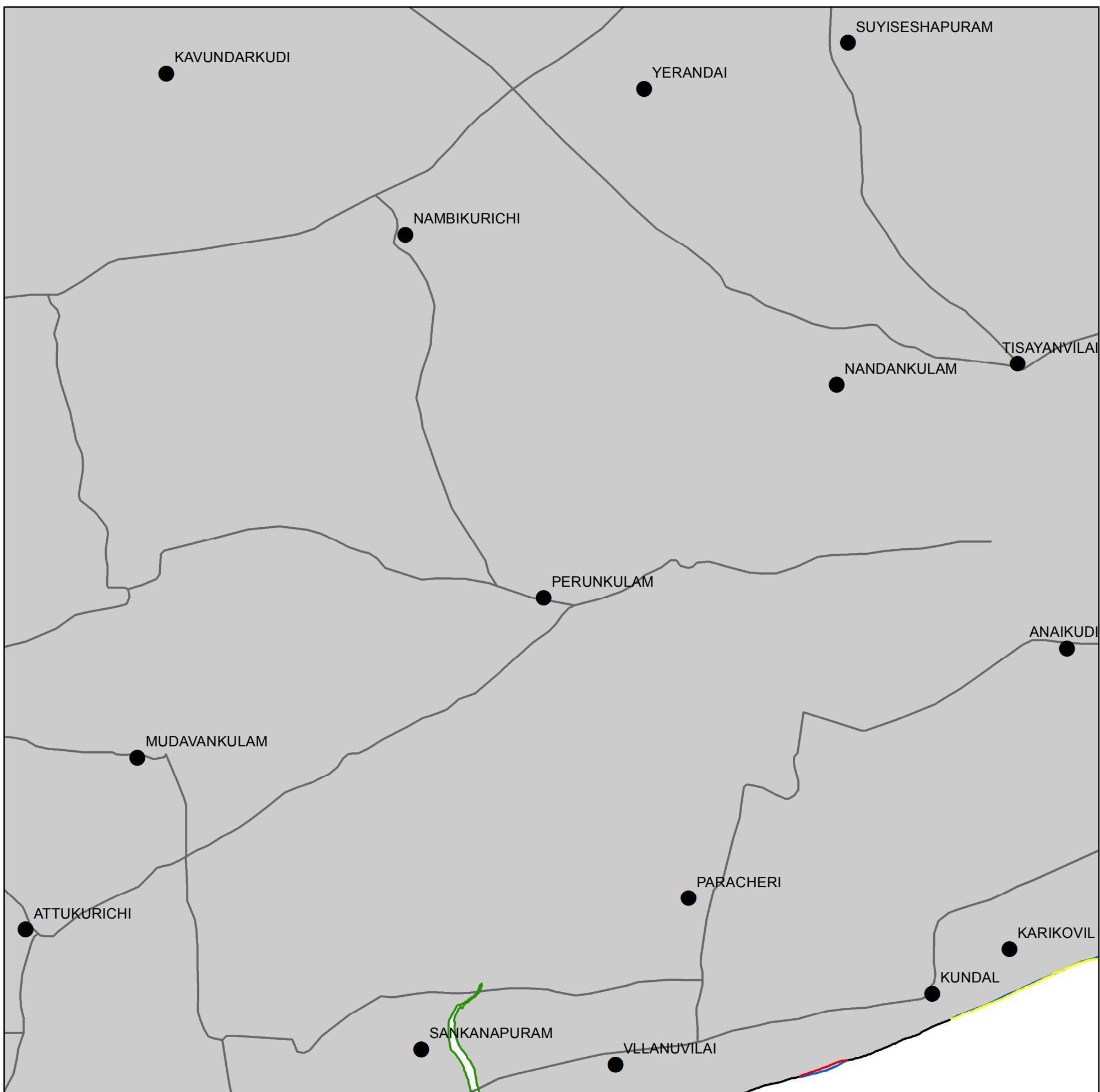
# SHORELINE CHANGE MAP

TIRUNELVELI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58H15SW



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58H11NE	58H15NW	58H15NE
58H11SE	58H15SW	58H15SE
58H12NE	58H16NW	58H16NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



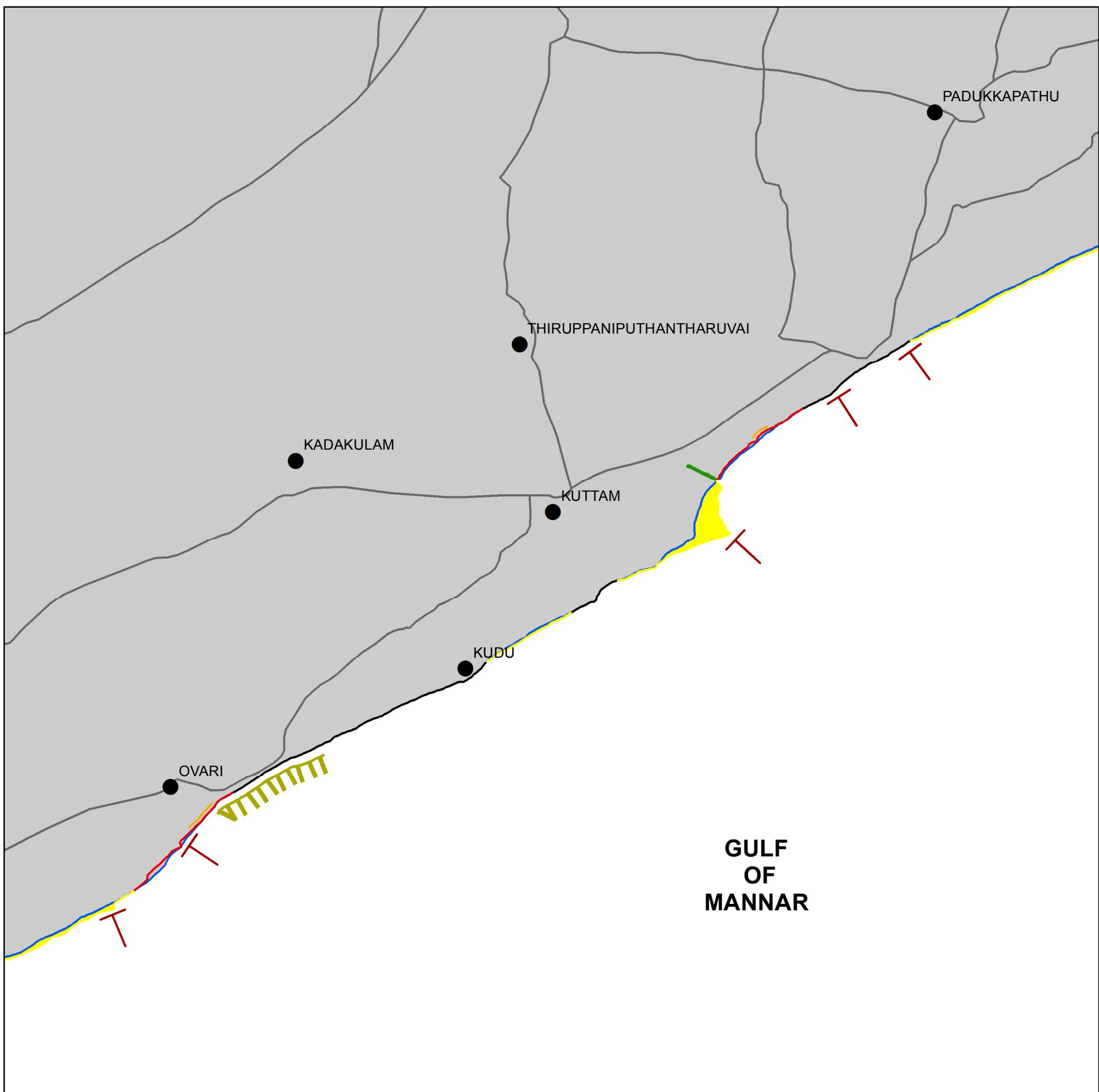
# SHORELINE CHANGE MAP

TIRUNELVELI/THOOTHUKUDI  
DISTRICT

**TAMILNADU**

FOR OFFICIAL USE ONLY

SHEET NO. 58H15SE



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- ||||| GROYNES
- T— BREAKWATER
- HABITATION



0 2 km

58H15NW	58H15NE	58L03NW
58H15SW	58H15SE	58L03SW
58H16NW	58H16NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



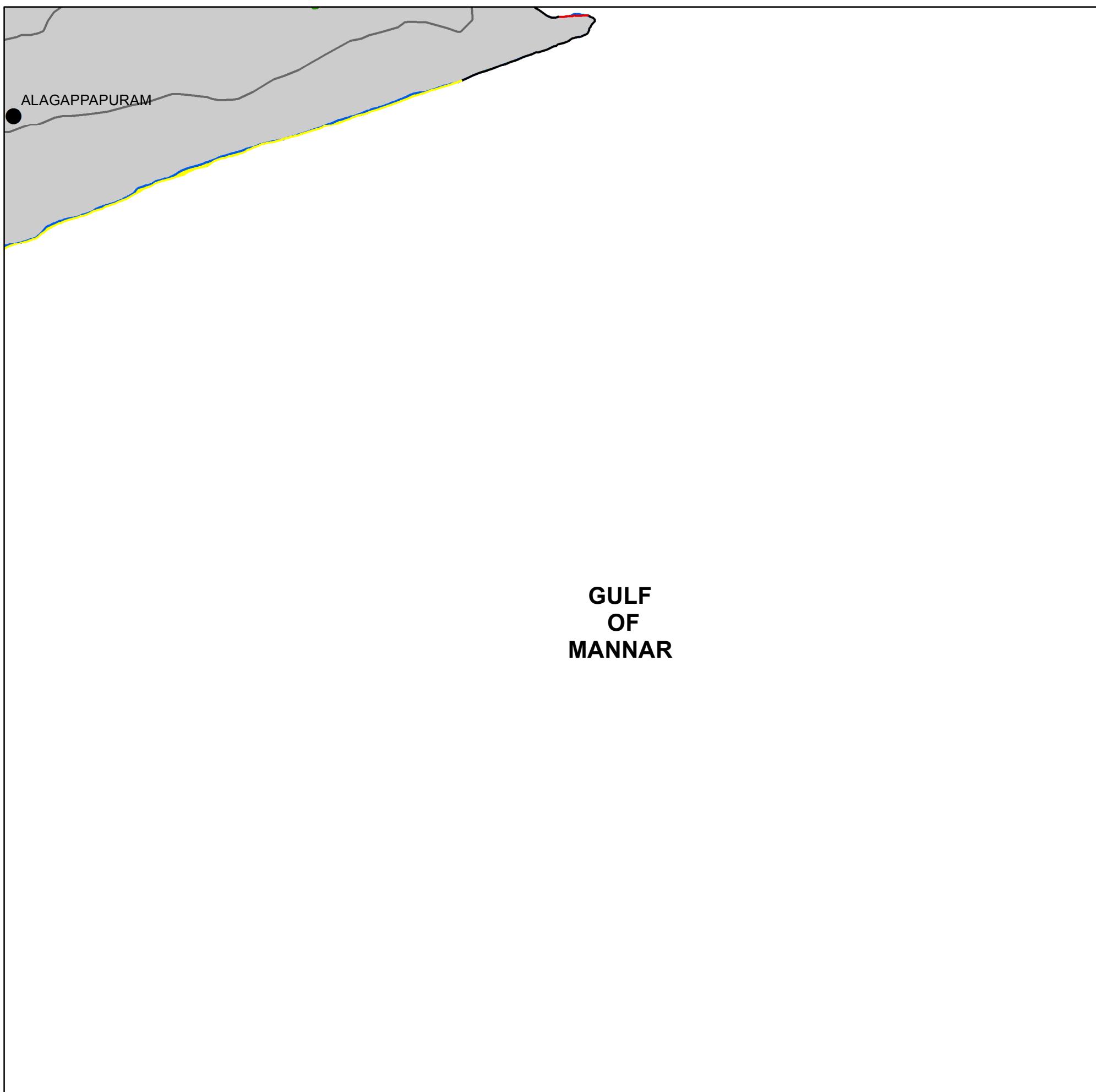
# SHORELINE CHANGE MAP

THOOTHUKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L03SW



## Legend

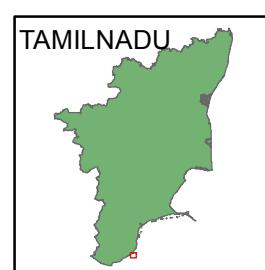
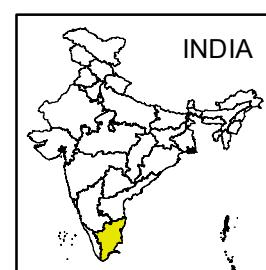
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58H15NE	58L03NW	SEA
58H15SE	58L03SW	SEA
58H16NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



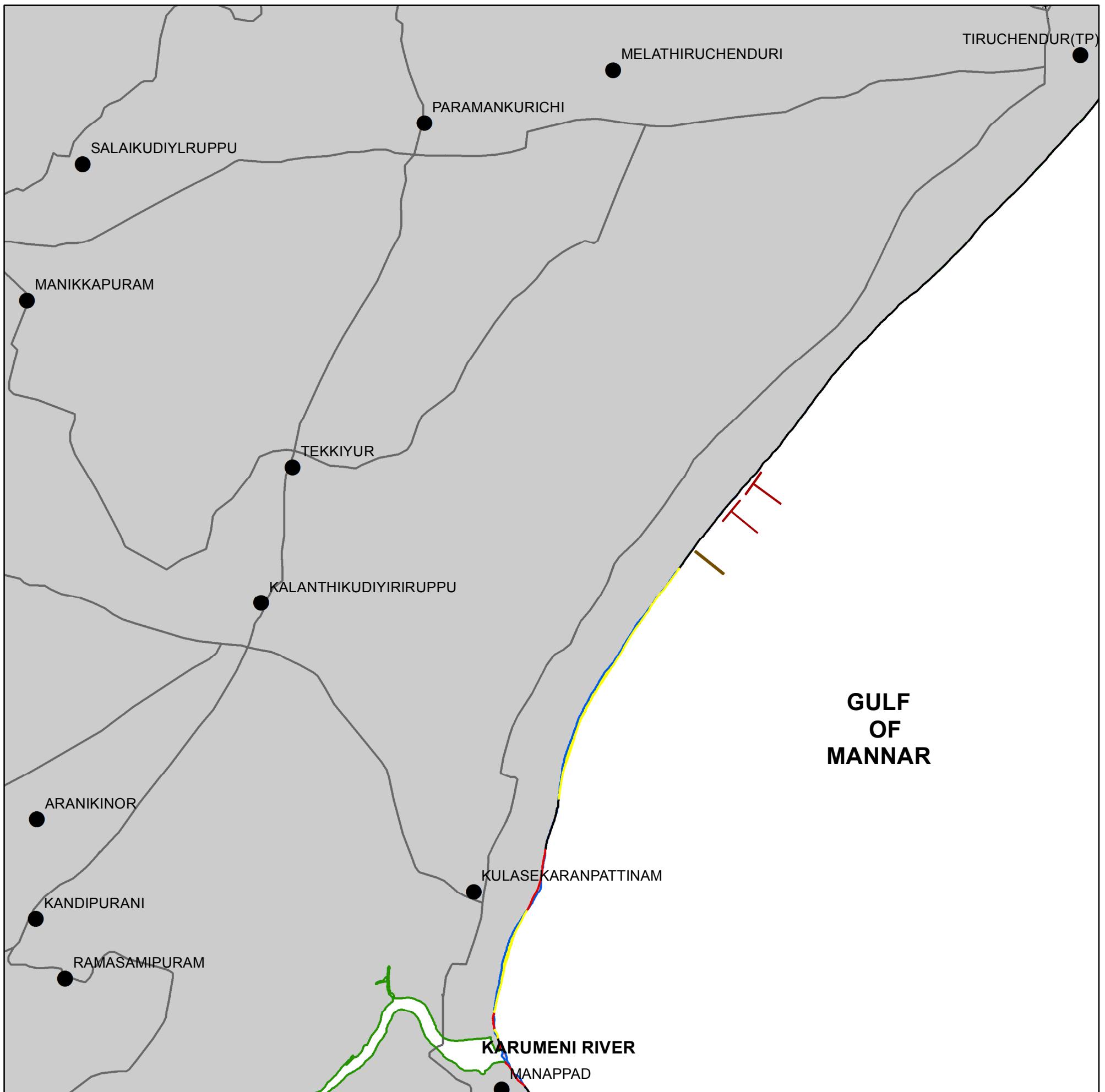
# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L03NW



## Legend

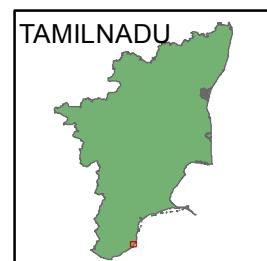
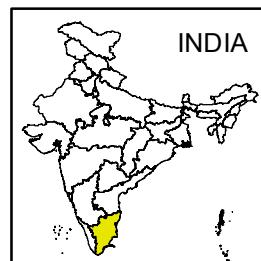
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- BREAKWATER
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58H14SE	58L02SW	58L02SE
58H15NE	58L03NW	SEA
58H15SE	58L03SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

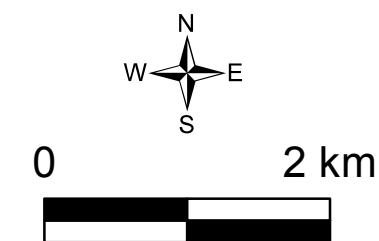
FOR OFFICIAL USE ONLY

SHEET NO. 58L03NE

GULF  
OF  
MANNAR

## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- SEA WALL



INDEX TO SHEETS

58L02SW	58L02SE	SEA
58L03NW	SEA	SEA
58L03SW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L02SE



## Legend

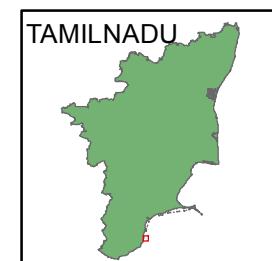
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- HABITATION



0 2 km

## INDEX TO SHEETS

58L02NW	58L02NE	SEA
58L02SW	58L02SE	SEA
58L03NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

THOOTHUKKUDI DISTRICT

TAMILNADU

SHEET NO. 58L02SW



## Legend

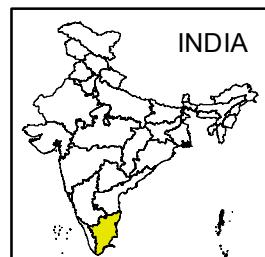
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- BREAKWATER
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58H14NE	58L02NW	58L02NE
58H14SE	58L02SW	58L02SE
58H15NE	58L03NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

THOOTHUKKUDI DISTRICT

TAMILNADU

SHEET NO. 58L02NE



## Legend

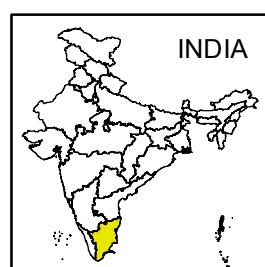
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- T — BREAKWATER
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58L01SW	58L01SE	SEA
58L02NW	58L02NE	SEA
58L02SW	58L02SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



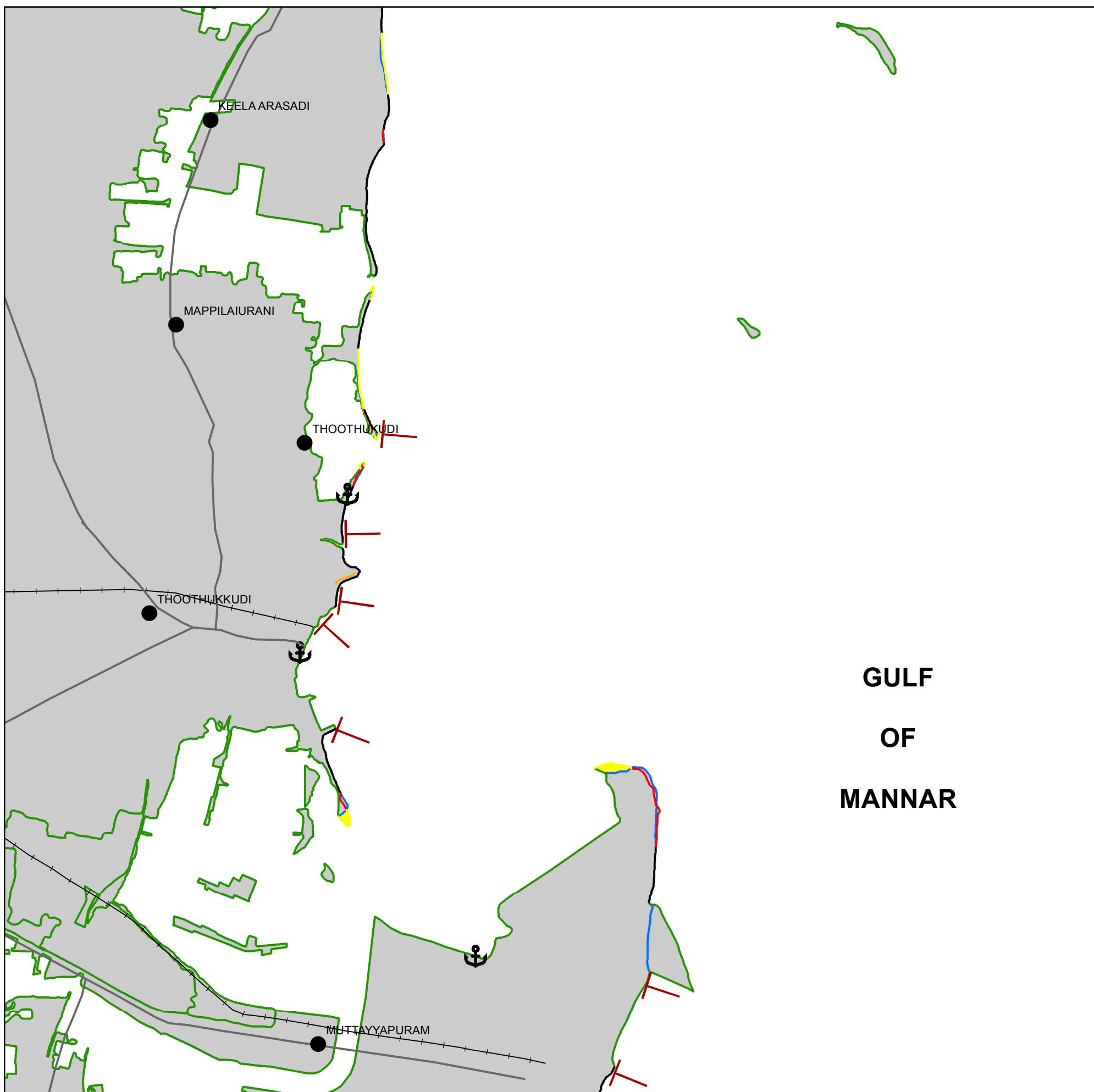
# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L01SE



## Legend

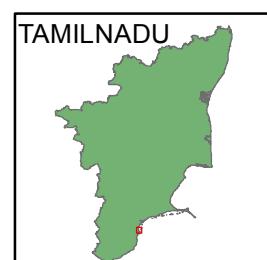
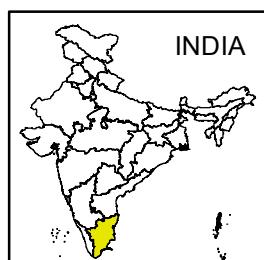
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58L01NW	58L01NE	SEA
58L01SW	58L01SE	SEA
58L02NW	58L02NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



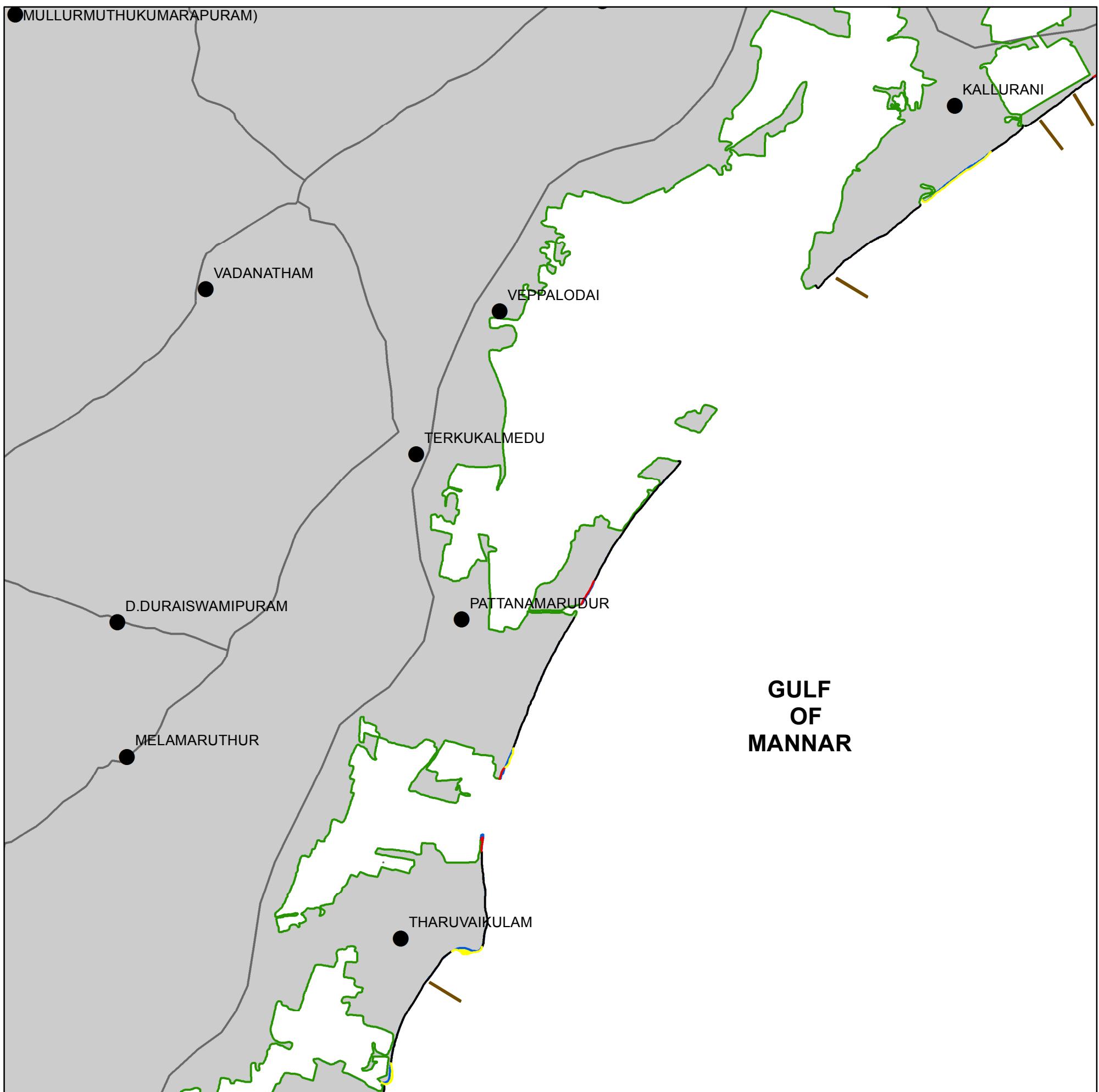
# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L01NE



## Legend

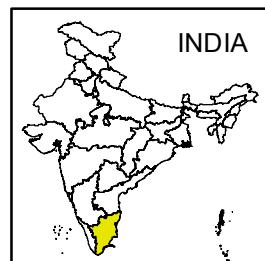
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- HABITATION



0

2 km

58K04SW	58K04SE	SEA
58L01NW	58L01NE	58L05NW
58L01SW	58L01SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

THOOTHUKKUDI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58L05NW



## Legend

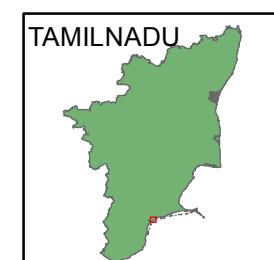
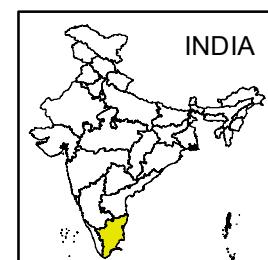
- █ EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- BREAKWATER



0 2 km

## INDEX TO SHEETS

58K04NE	58K08NW	SEA
58K04SE	58L05NW	SEA
58L01NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

THOOTHUKKUDI  
RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K08SW



## Legend

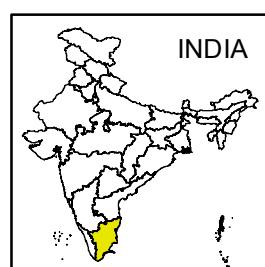
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- GROYNES
- BREAKWATER
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58K04NE	58K08NW	SEA
58K04SE	58K08SW	58K08SE
58L01NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



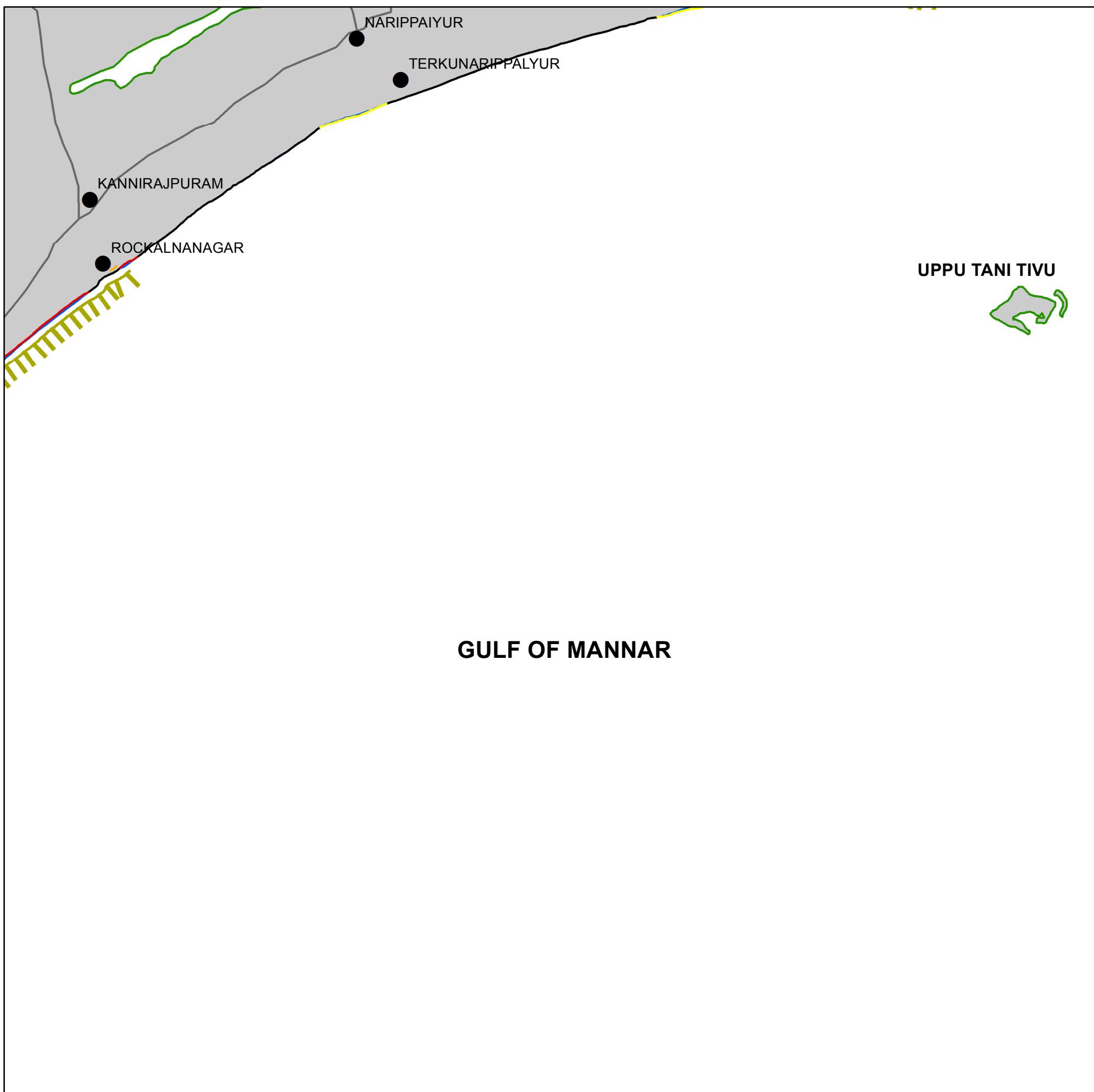
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K08SE



## Legend

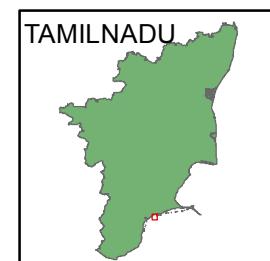
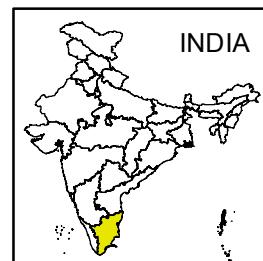
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- |||| GROYNES
- HABITATION



0 2 km

## INDEX TO SHEETS

58K08NW	58K08NE	58K12NW
58K08SW	58K08SE	SEA
58L05NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



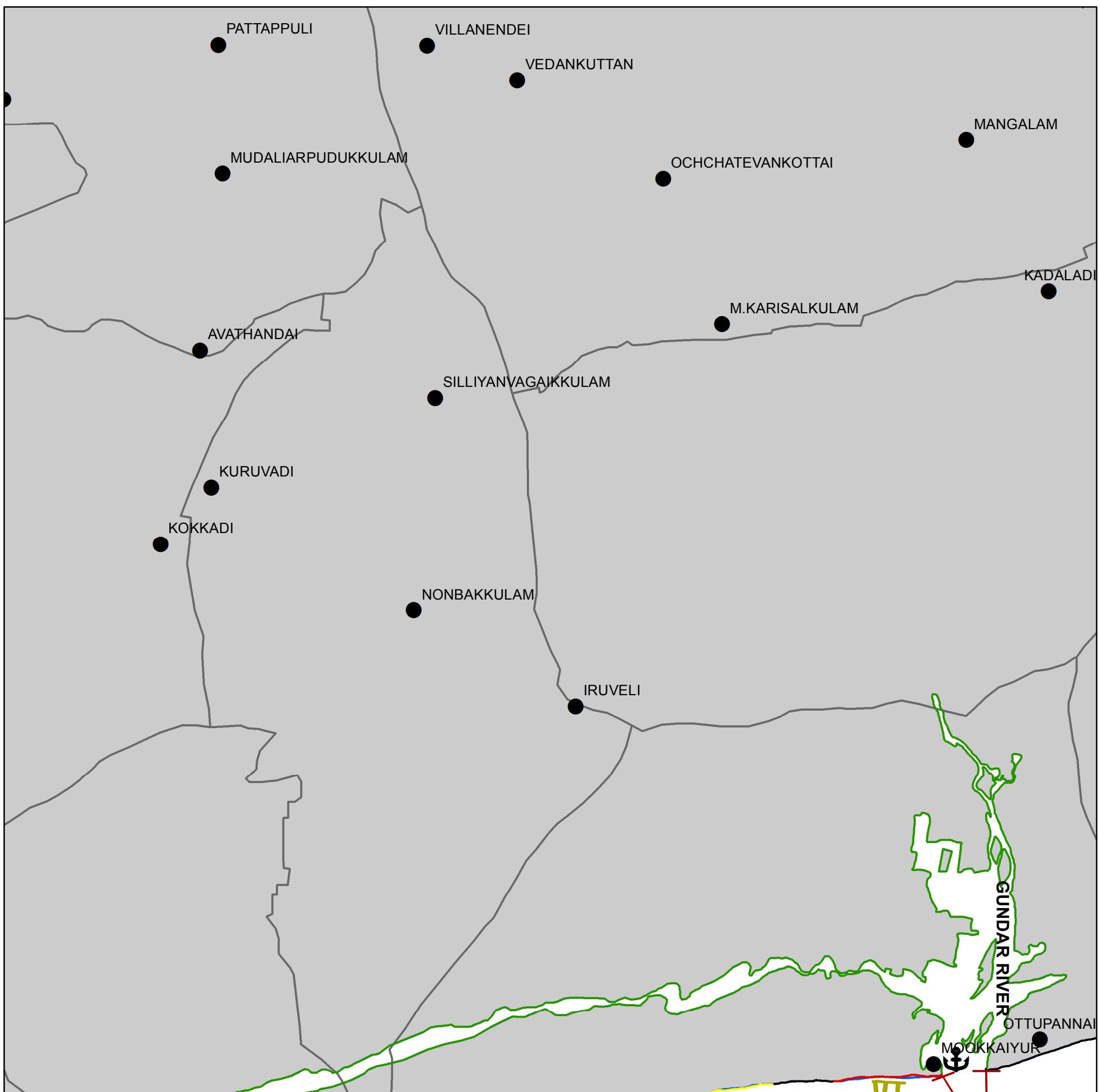
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K08NE



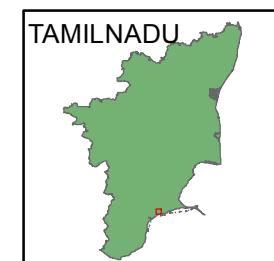
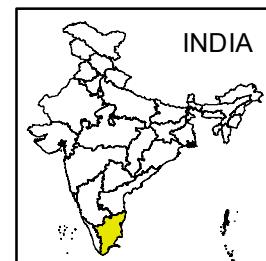
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- BREAKWATER
- GROYNES
- PORT/HARBOUR
- HABITATION



0 2 km

58K07SW	58K07SE	58K11SW
58K08NW	58K08NE	58K12NW
58K08SW	58K08SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



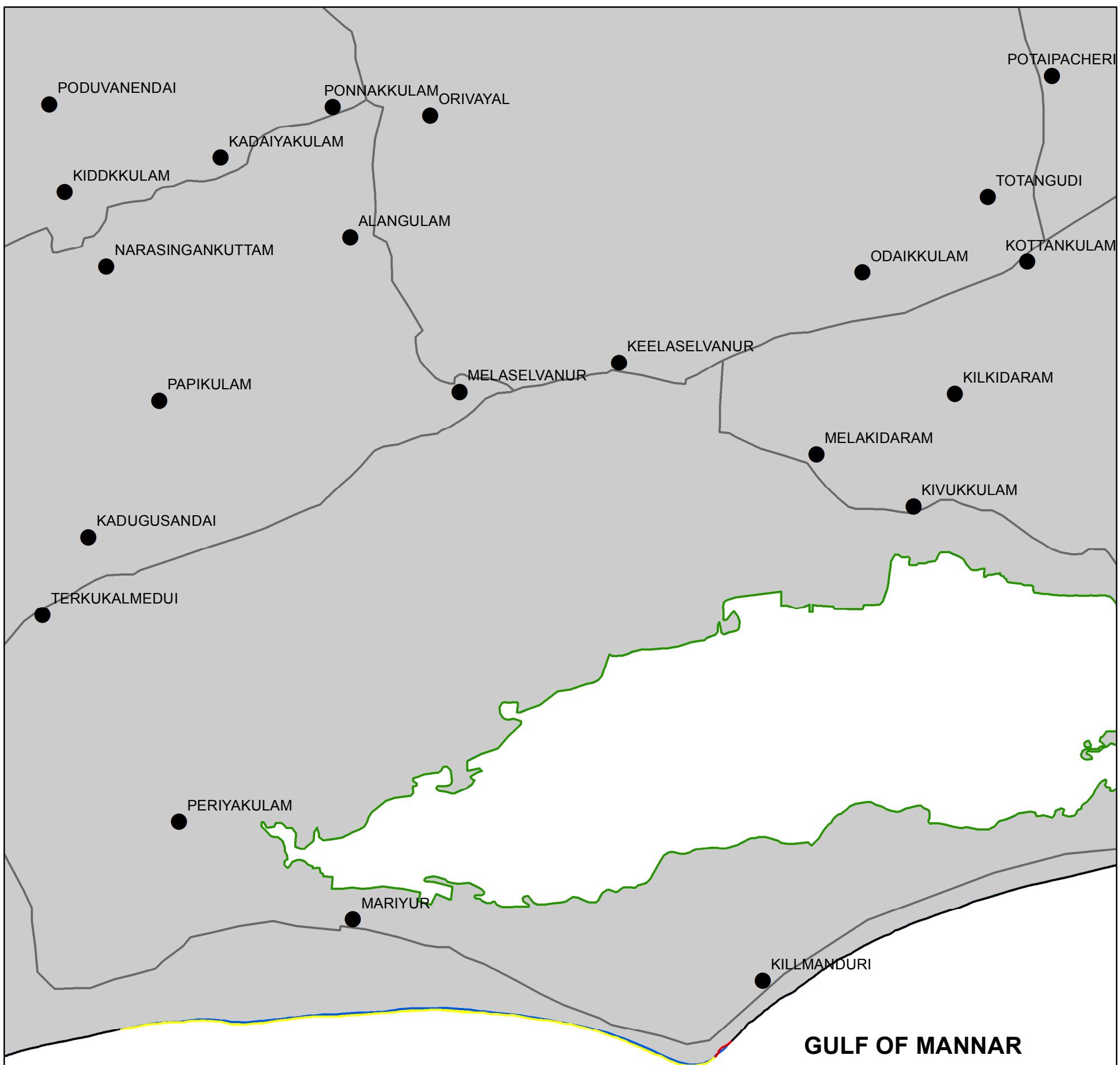
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K12NW



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58K07SE	58K11SW	58K11SE
58K08NE	58K12NW	58K12NE
58K08SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



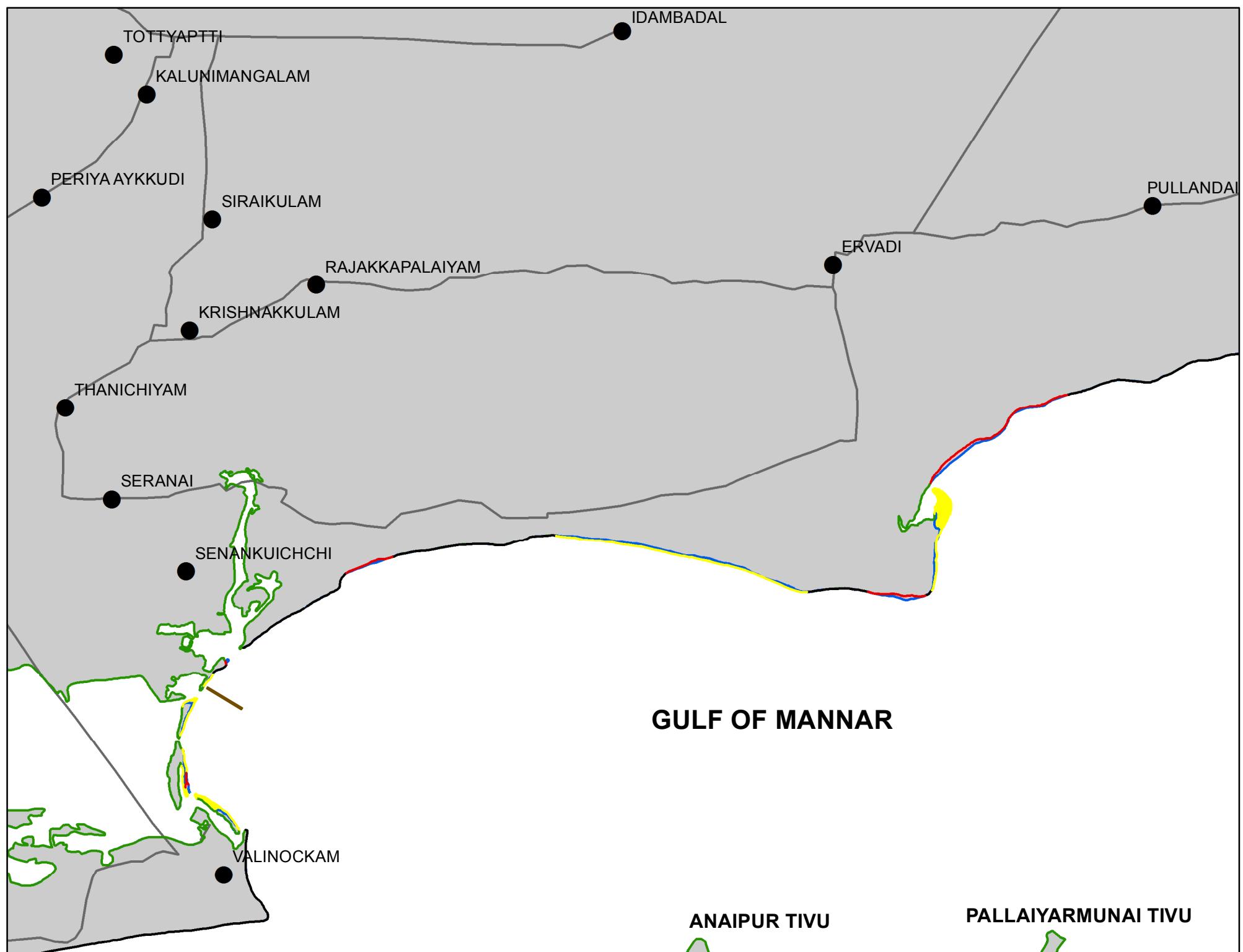
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

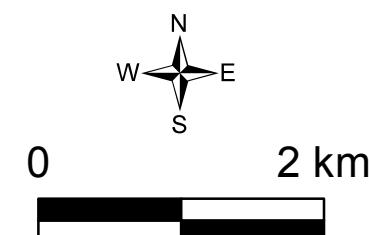
FOR OFFICIAL USE ONLY

SHEET NO. 58K12NE



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- HABITATION



## INDEX TO SHEETS

58K11SW	58K11SE	58K15SW
58K12NW	58K12NE	58K16NW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



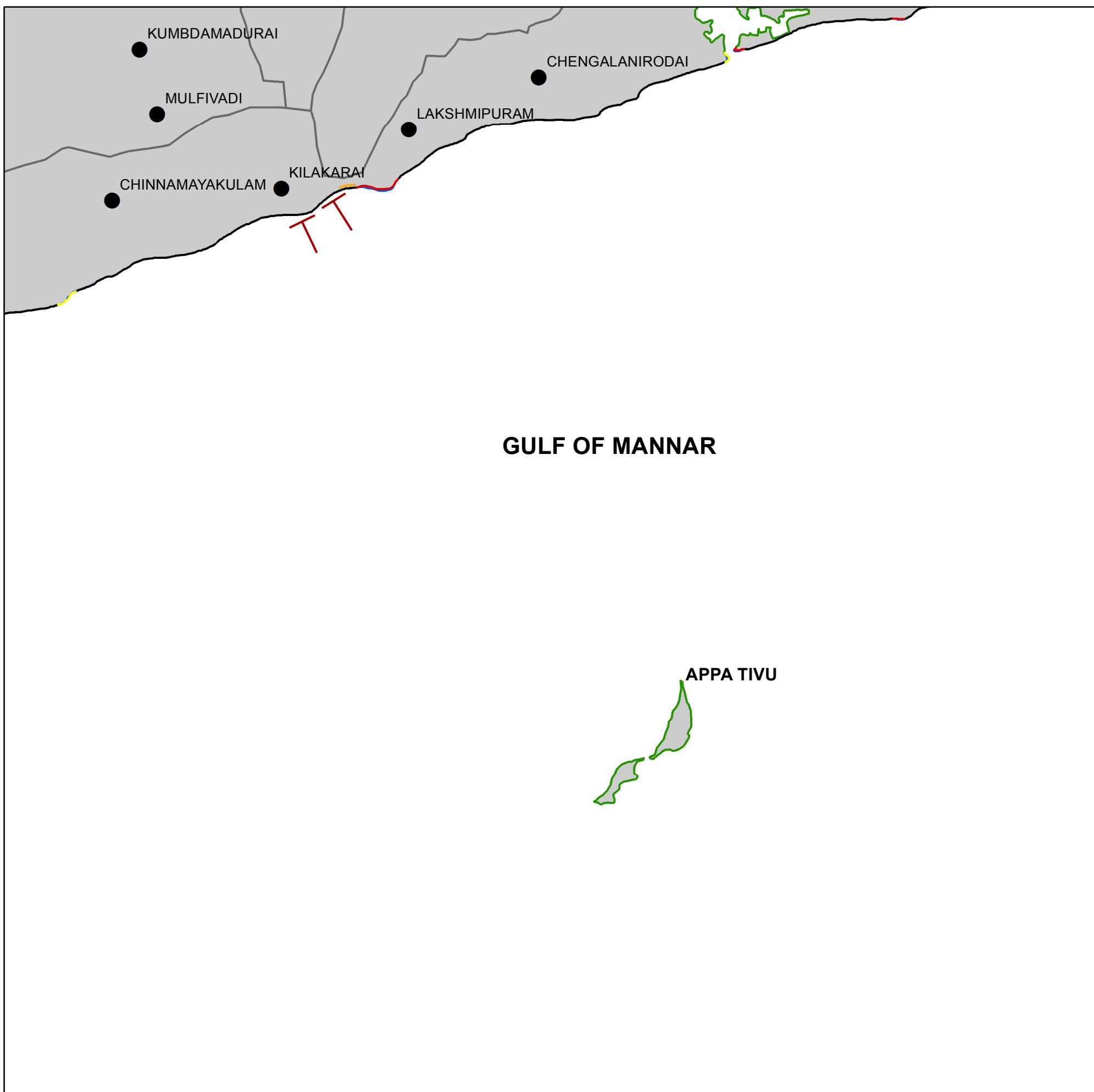
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K16NW



## Legend

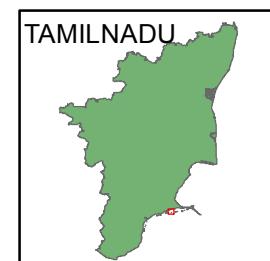
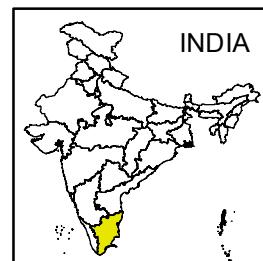
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

58K11SE	58K15SW	58K15SE
58K12NE	58K16NW	58K16NE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



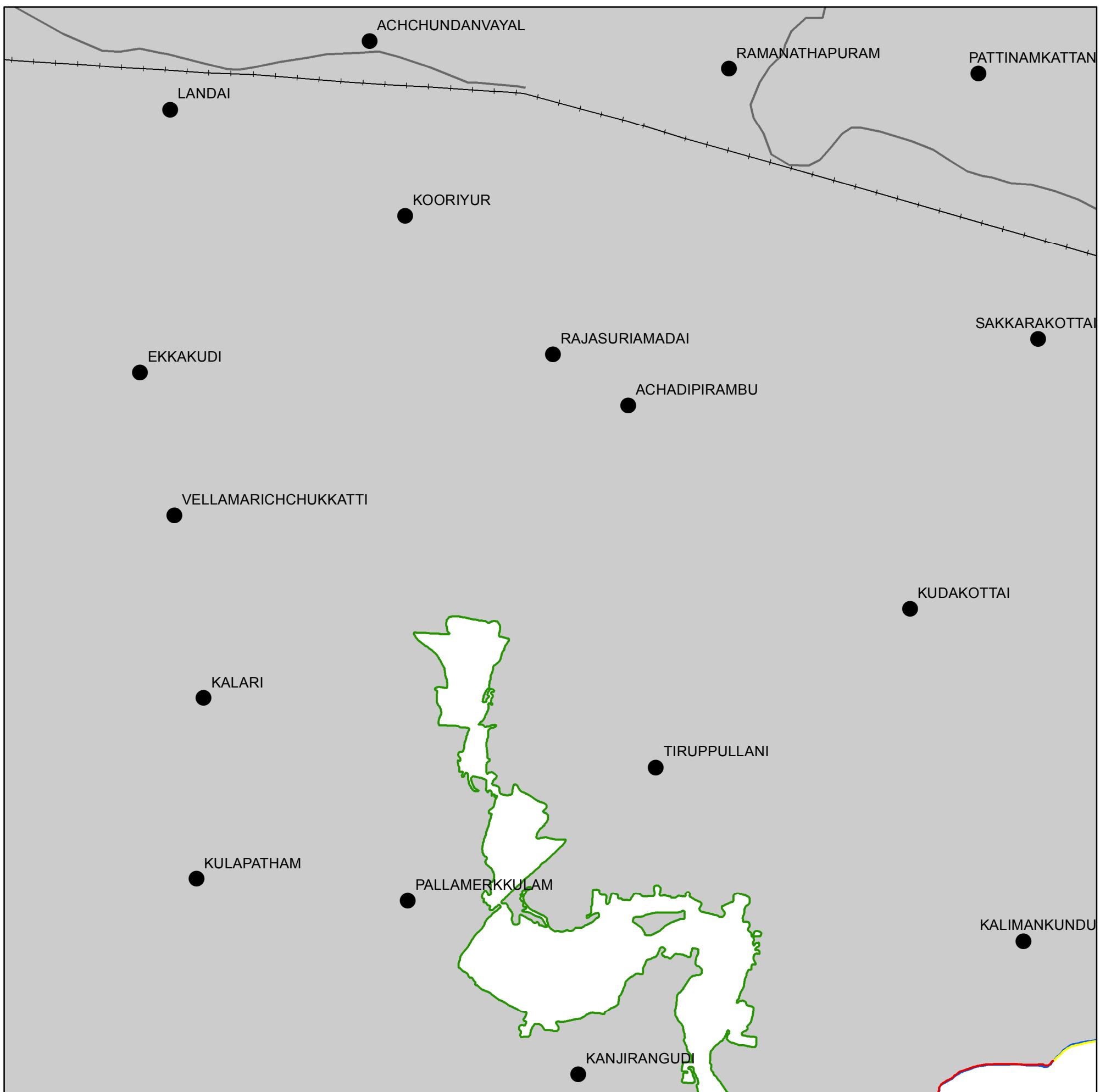
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

RAMANATHAPURAM DISTRICT

TAMILNADU

SHEET NO. 58K15SW



## Legend

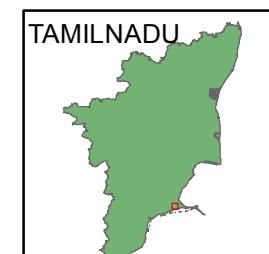
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58K11NE	58K15NW	58K15NE
58K11SE	58K15SW	58K15SE
58K12NE	58K16NW	58K16NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



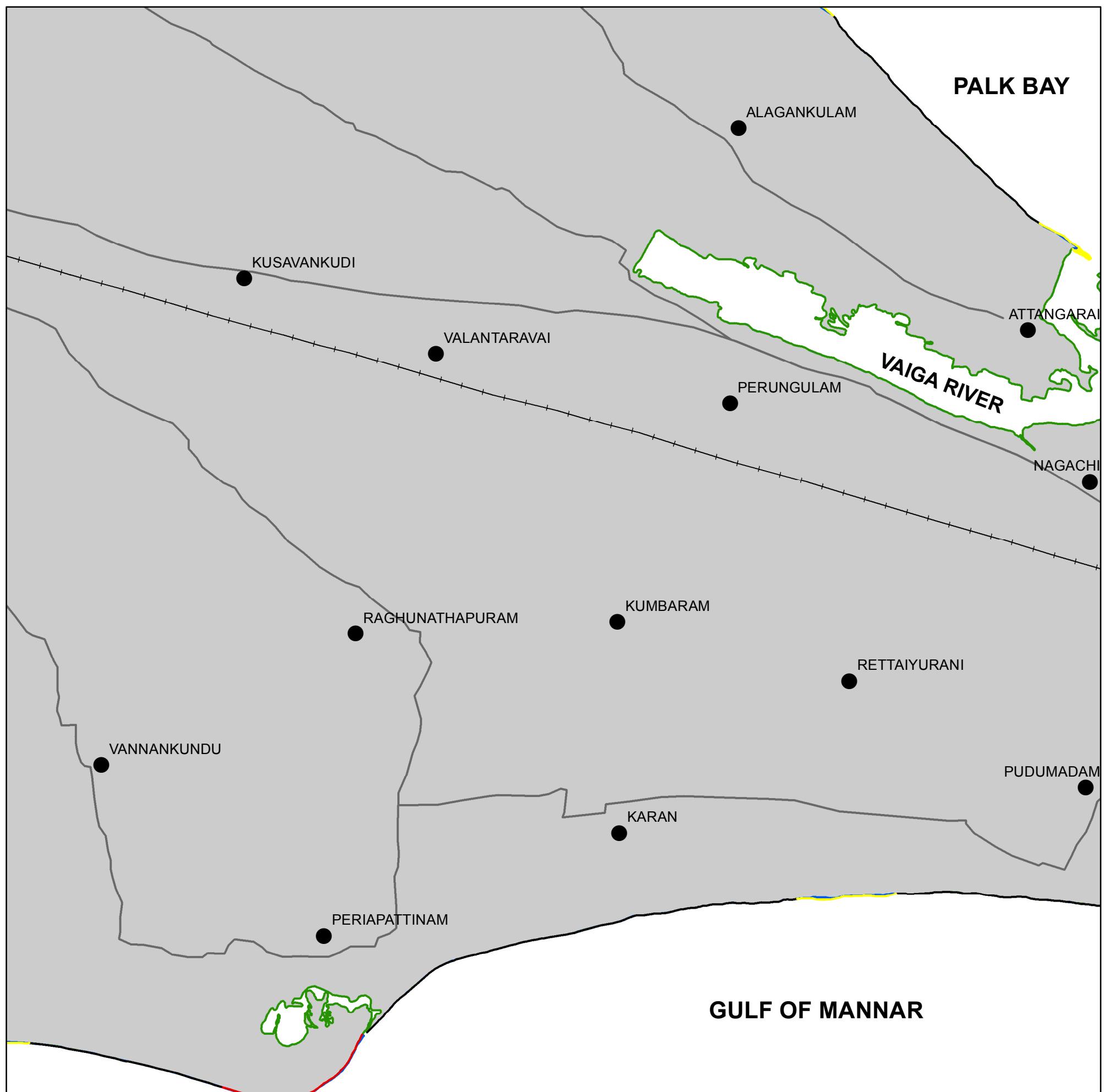
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K15SE



## Legend

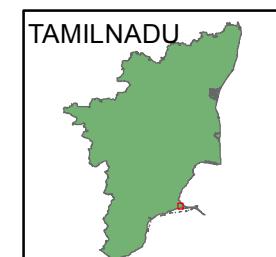
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58K15NW	58K15NE	SEA
58K15SW	58K15SE	58003SW
58K16NW	58K16NE	58004NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

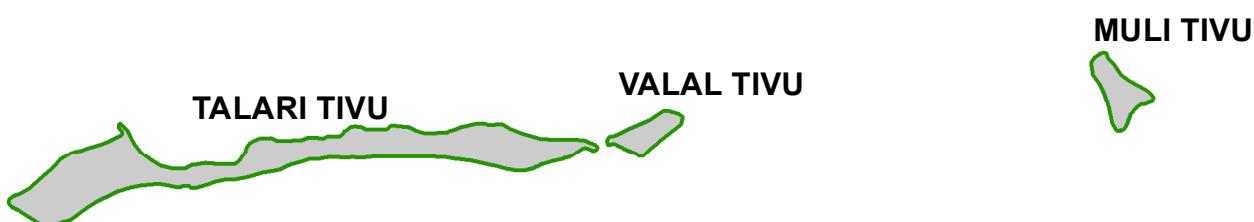
RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K16NE

GULF OF MANNAR



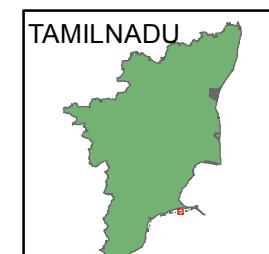
## Legend

- █ EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06



0 2 km

58K15SW	58K15SE	58003SW
58K16NW	58K16NE	58004NW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



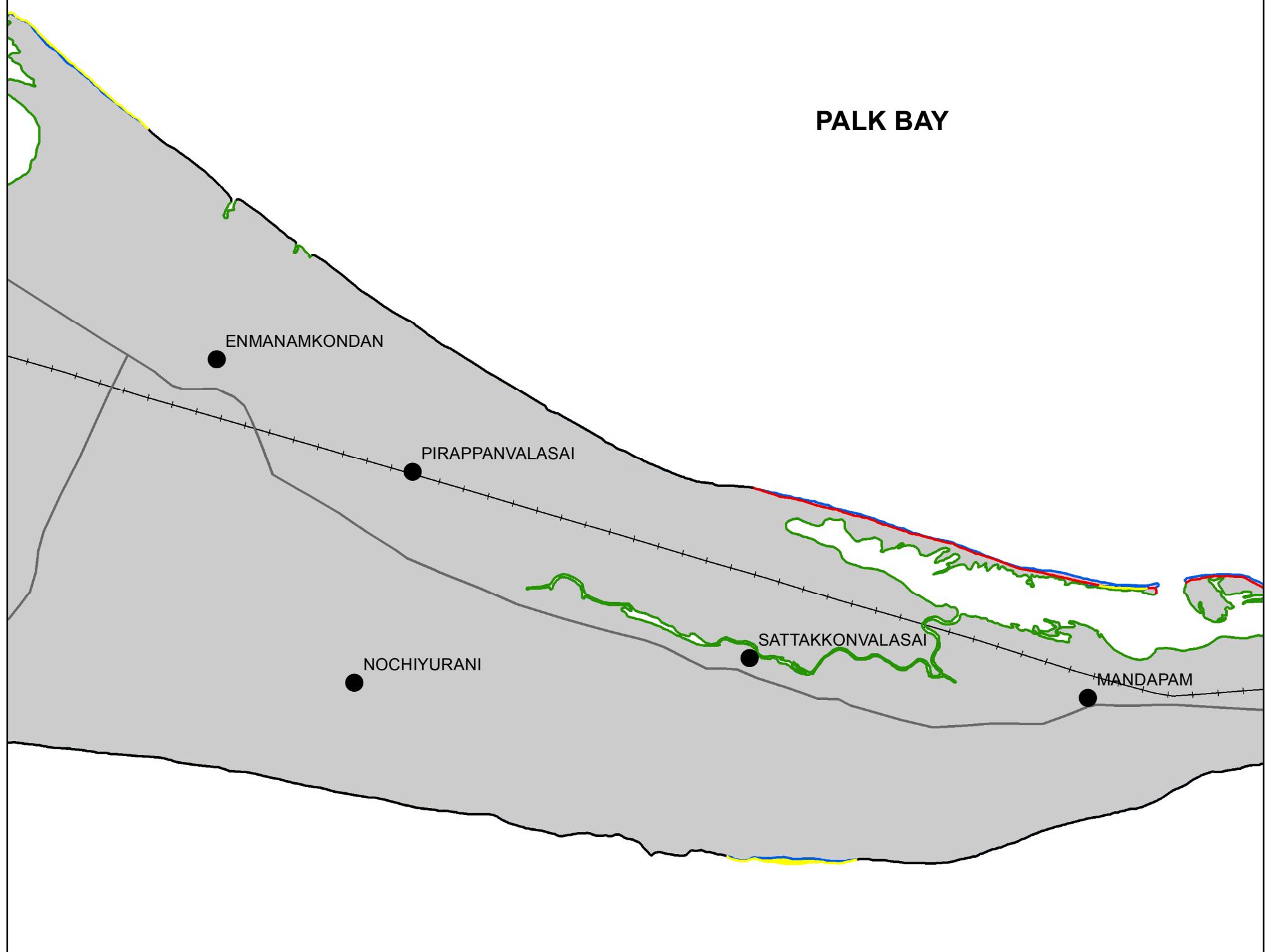
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58003SW



## Legend

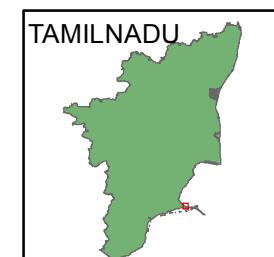
- EROSION (Red)
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- STABLE (Black line)
- ROAD (Grey line)
- RAILWAY (Dashed line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

58K15NE	SEA	SEA
58K15SE	58003SW	58003SE
58K16NE	58004NW	58004NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

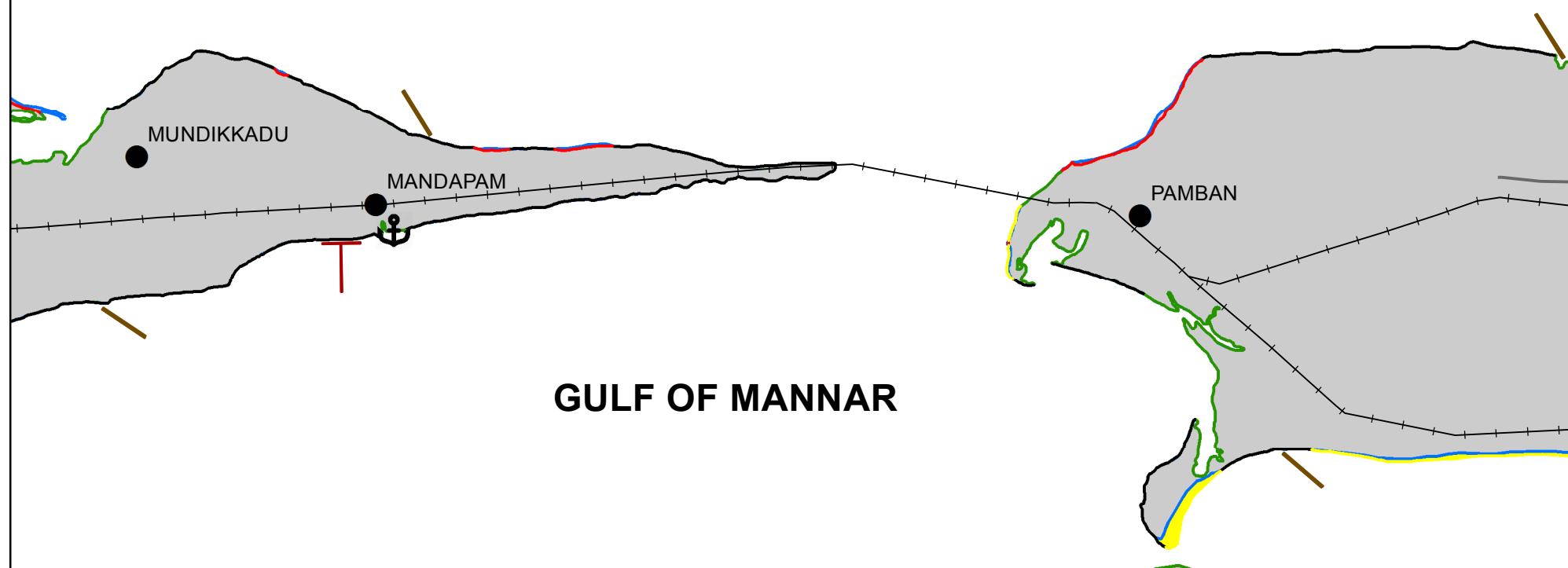
RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58003SE

## PALK BAY



### Legend

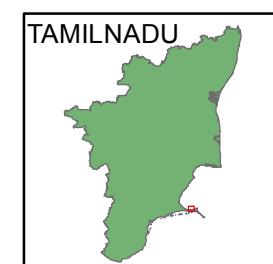
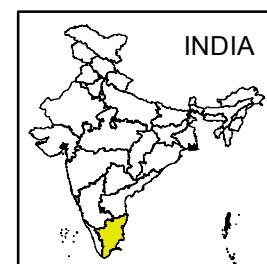
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- BREAKWATER
- JETTY
- PORT/HARBOUR
- HABITATION



0 2 km

### INDEX TO SHEETS

SEA	SEA	SEA
58003SW	58003SE	58007SW
58004NW	58004NE	58008NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58007SW

PALK BAY



## Legend

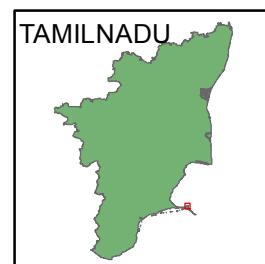
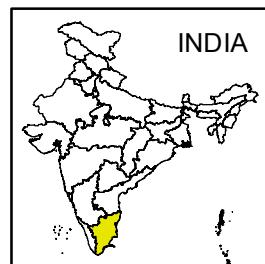
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

SEA	SEA	SEA
58003SE	58007SW	SEA
58004NE	58008NW	58008NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



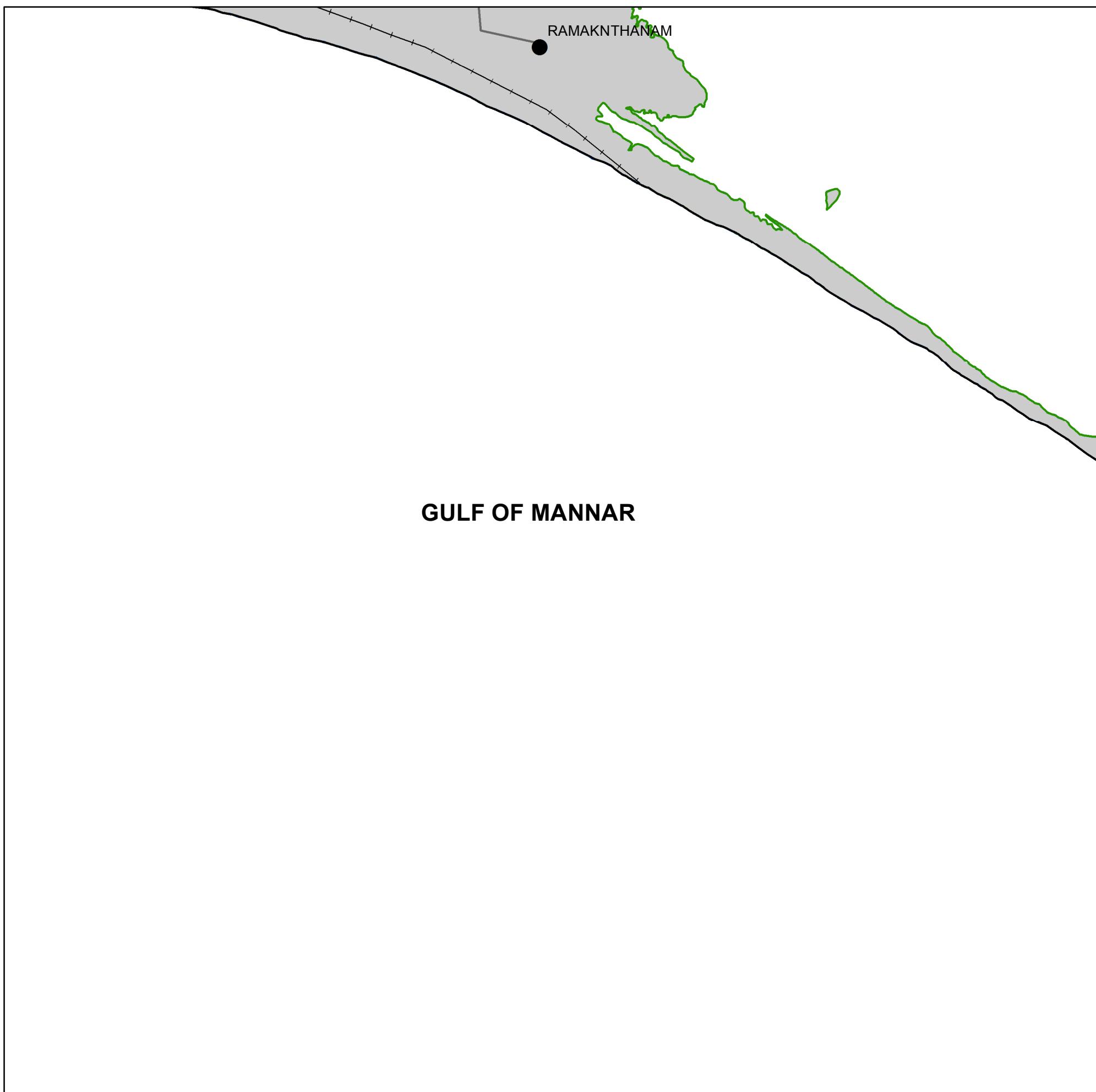
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58008NW



## Legend

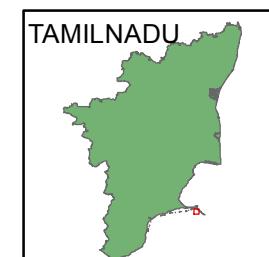
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58003SE	58007SW	SEA
58004NE	58008NW	58008NE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



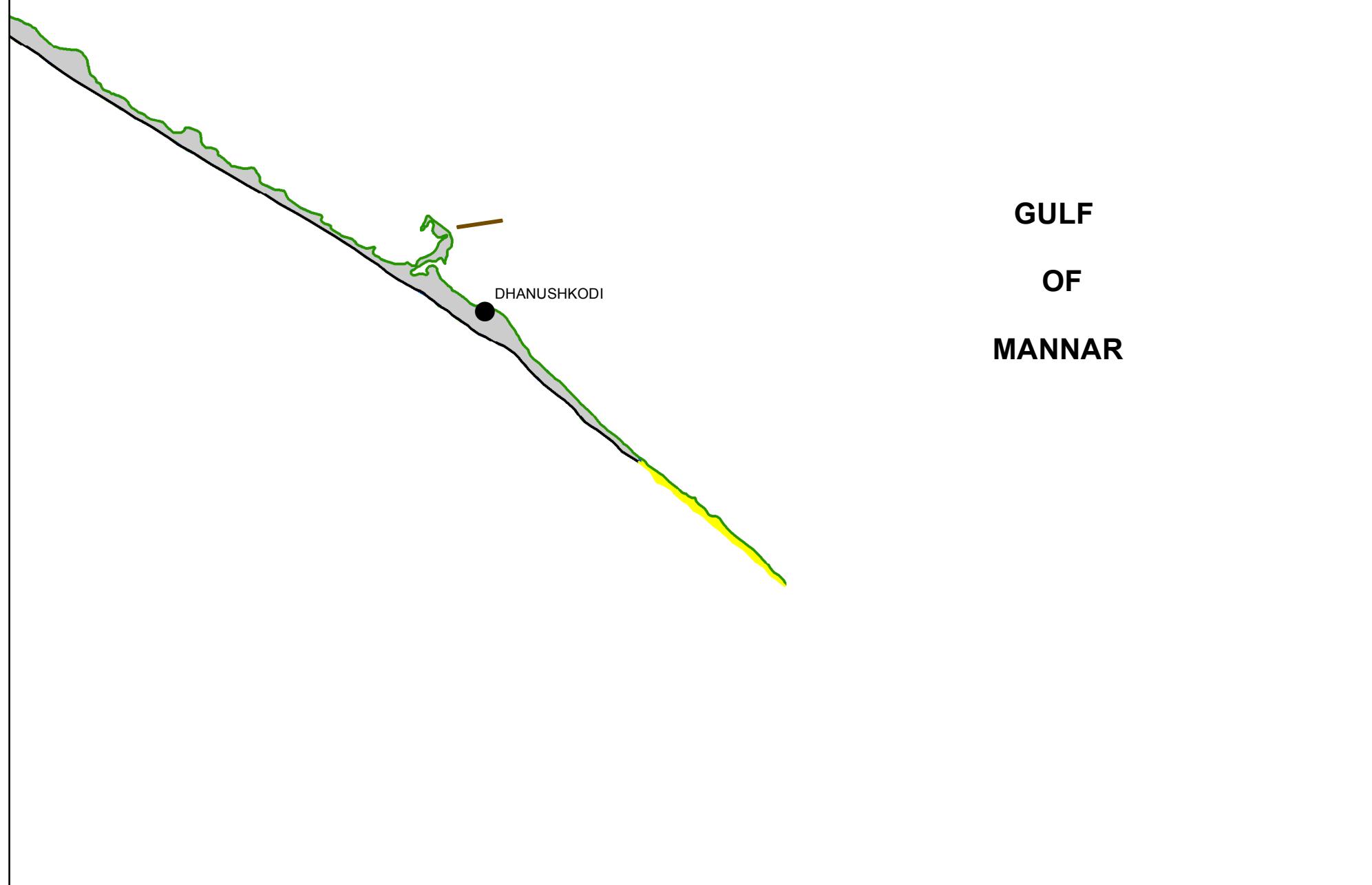
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58008NE



## Legend

- █ EROSION
- █ ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58007SW	SEA	SEA
58008NW	58008NE	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



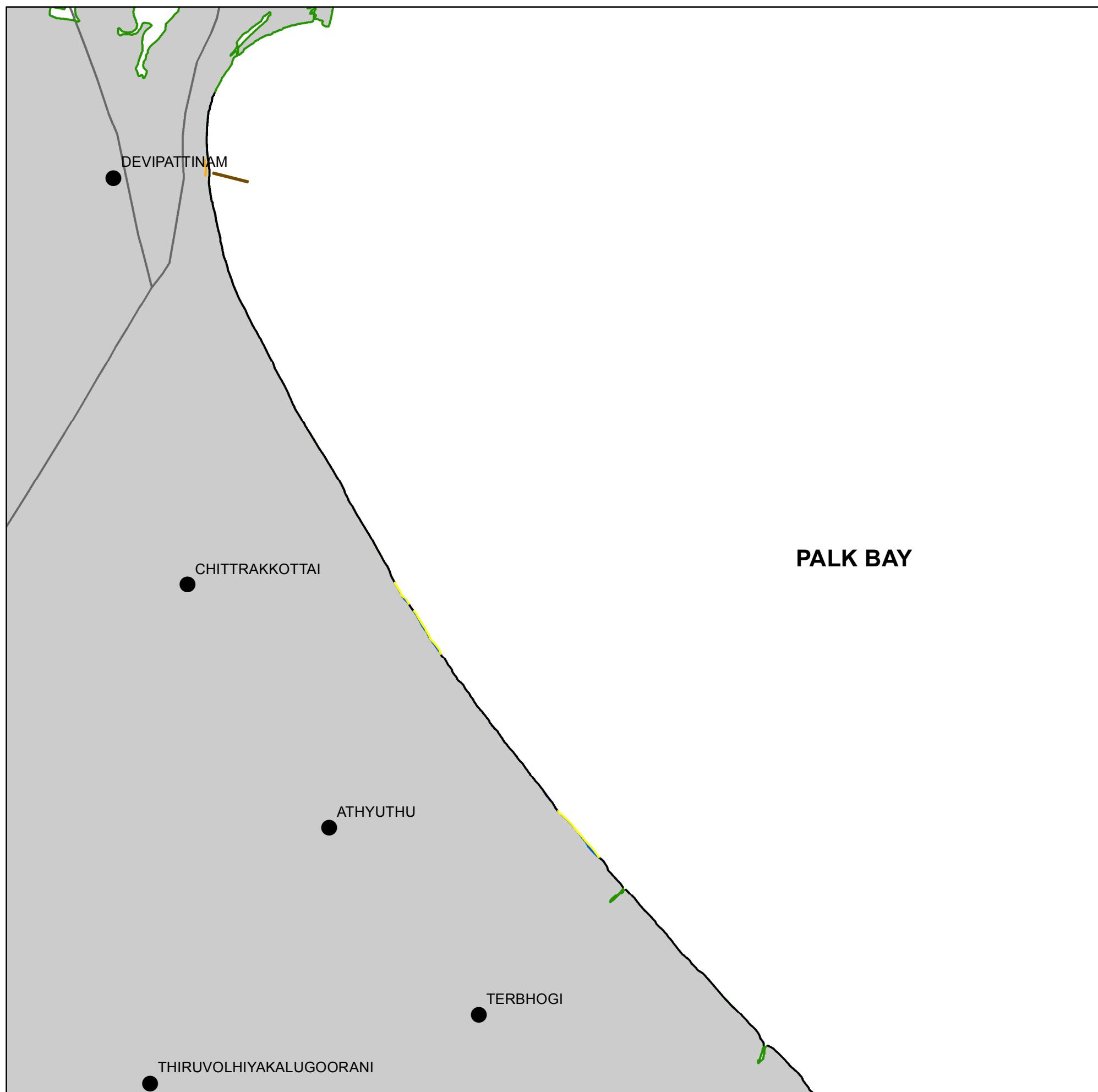
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K15NE



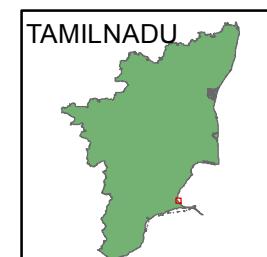
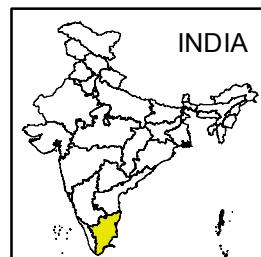
## Legend

- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- JETTY
- HABITATION



0 2 km

58K14SW	58K14SE	SEA
58K15NW	58K15NE	SEA
58K15SW	58K15SE	58003SW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K14SE



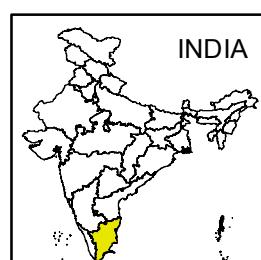
## Legend

- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

58K14NW	58K14NE	58O02NW
58K14SW	58K14SE	SEA
58K15NW	58K15NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



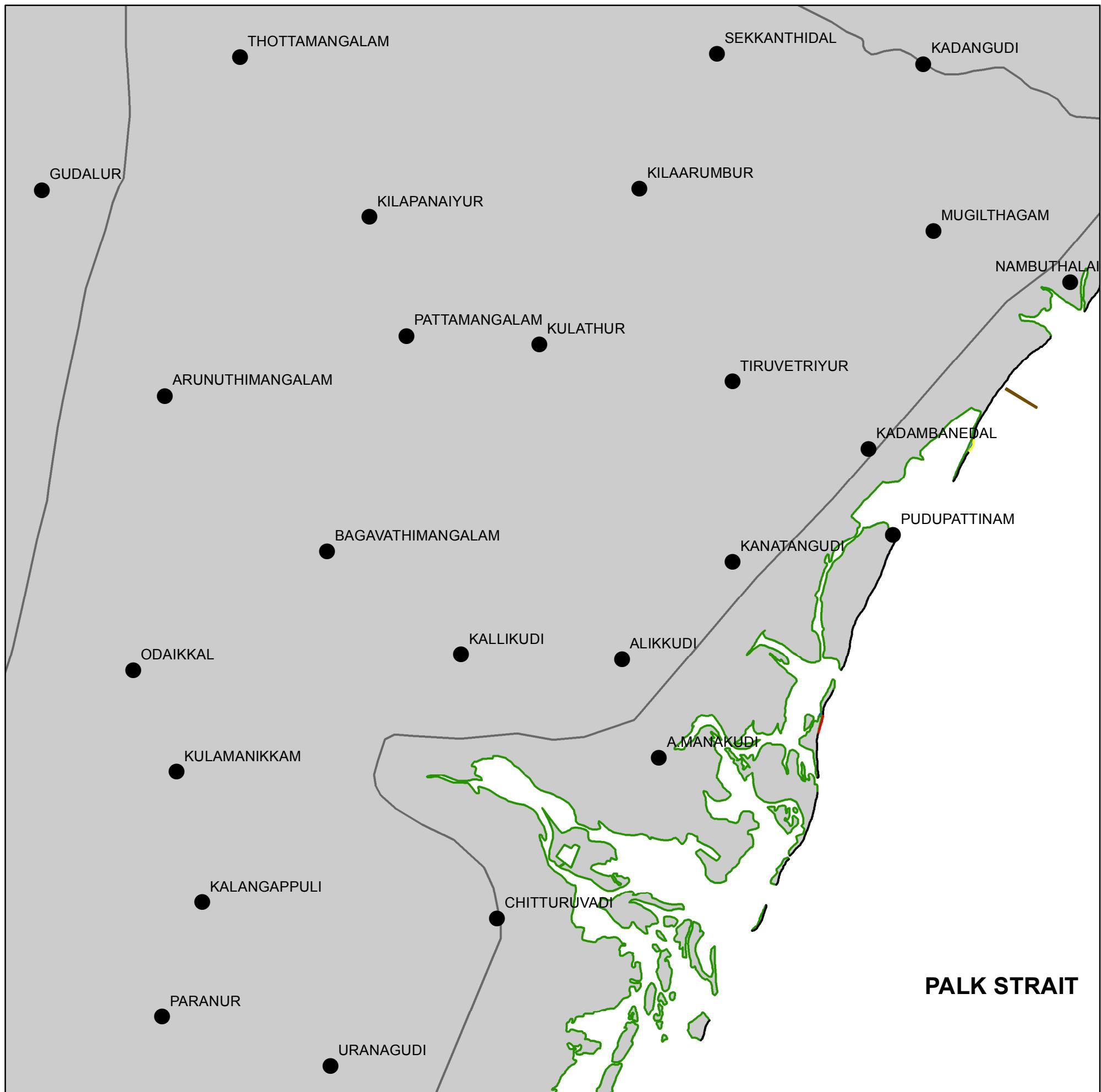
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58K14NE



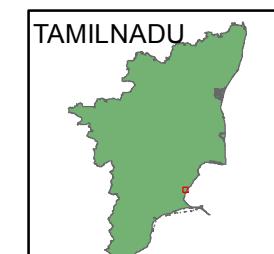
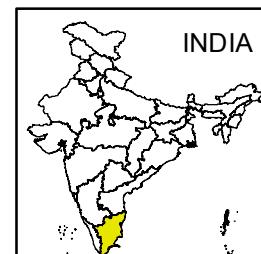
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- HABITATION



0 2 km

58K13SW	58K13SE	58001SW
58K14NW	58K14NE	58002NW
58K14SW	58K14SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



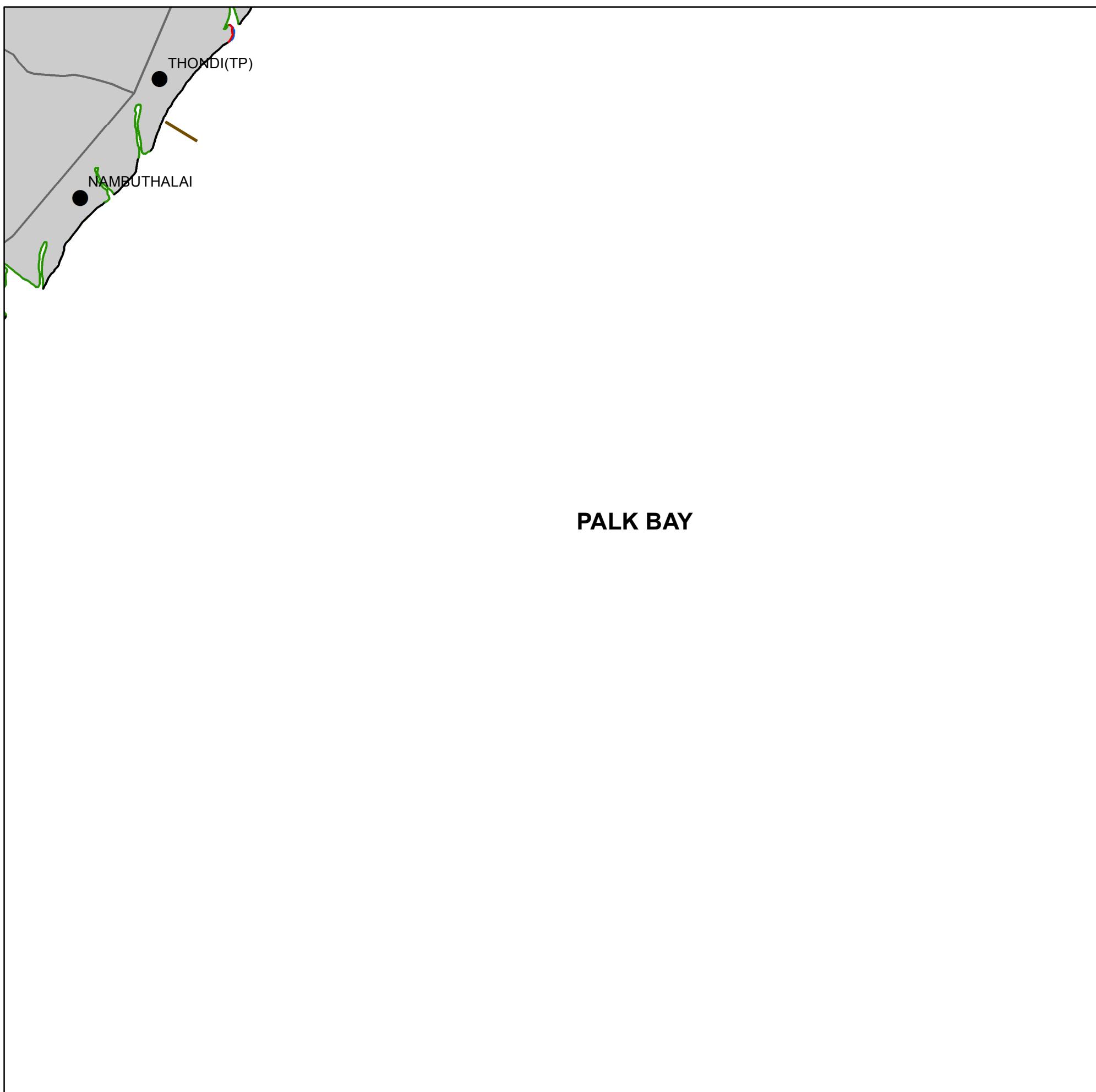
# SHORELINE CHANGE MAP

RAMANATHAPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58O02NW



## Legend

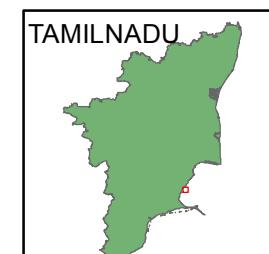
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58K13SE	58O01SW	SEA
58K14NE	58O02NW	SEA
58K14SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



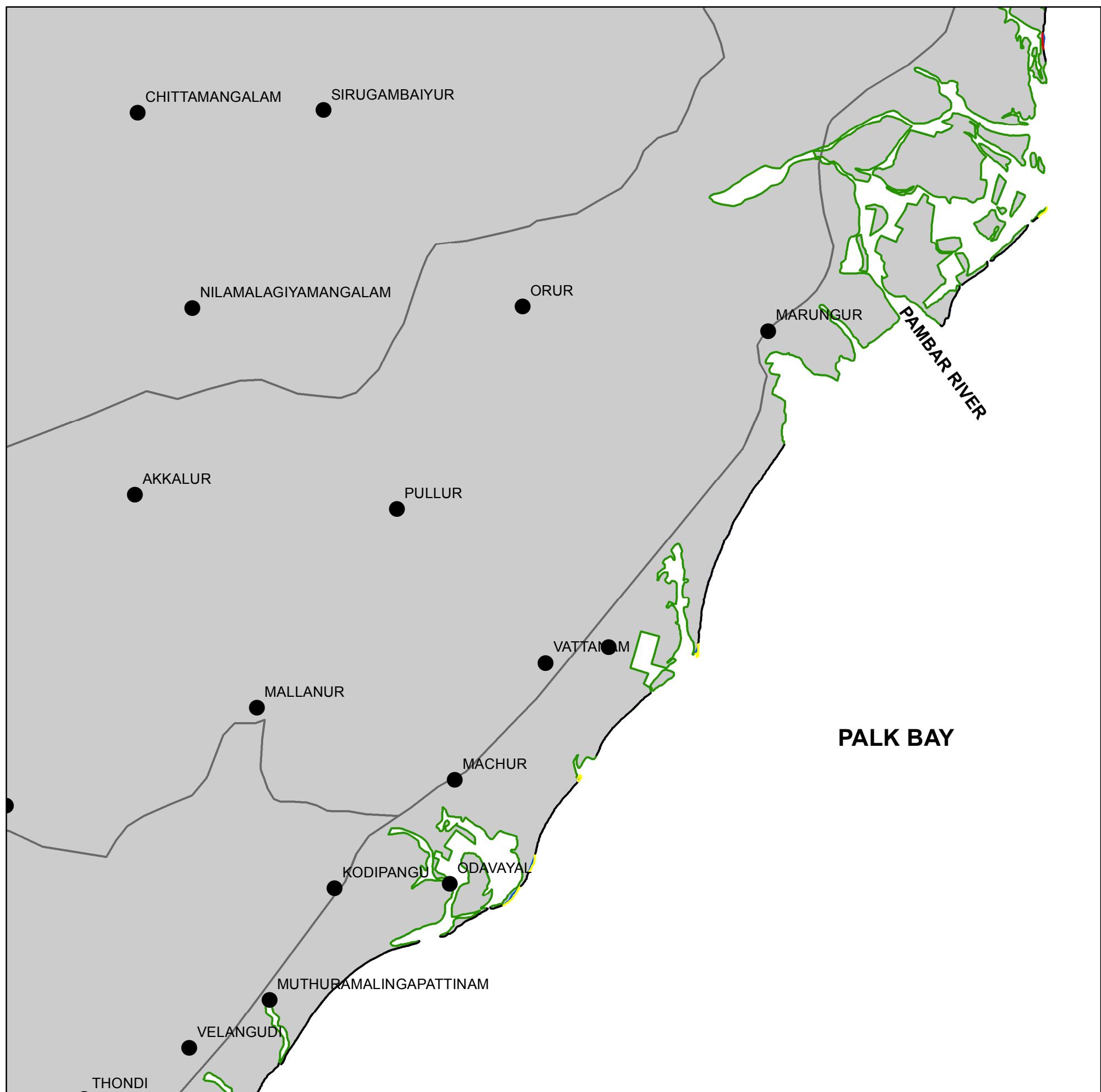
# SHORELINE CHANGE MAP

RAMANATHAPURAM AND  
PUDUKKOTTAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58O01SW



## Legend

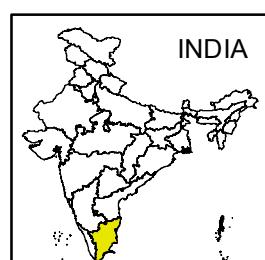
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58K13NE	58O01NW	58O01NE
58K13SE	58O01SW	SEA
58K14NE	58O02NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



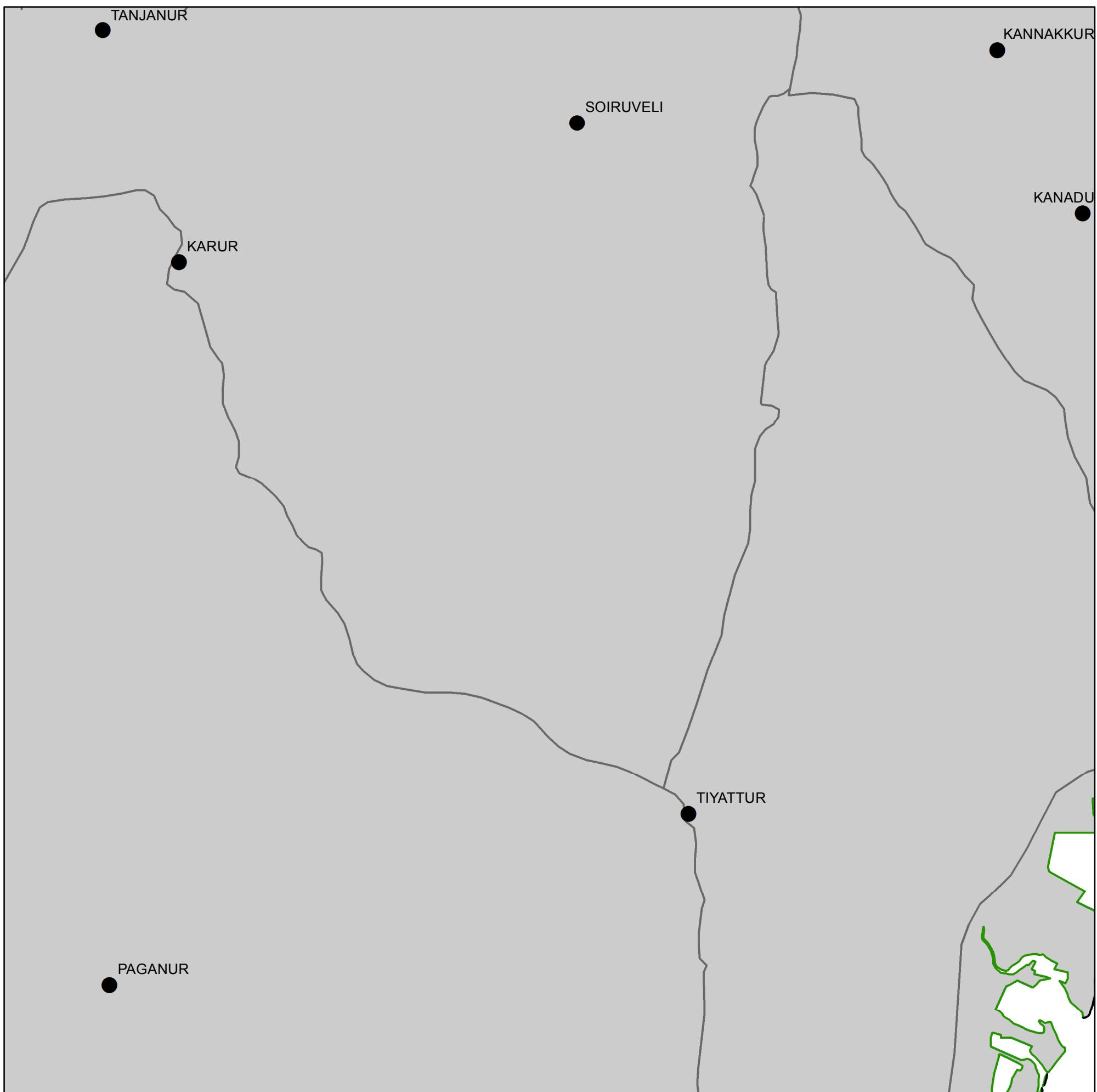
# SHORELINE CHANGE MAP

PUDUKKOTTAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58O01NW



## Legend

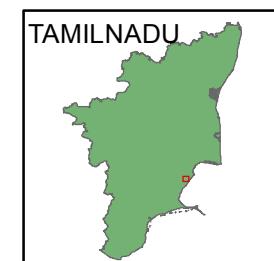
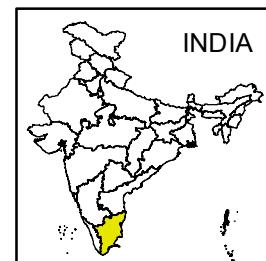
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58J16SE	58N04SW	58N04SE
58K13NE	58O01NW	58O01NE
58K13SE	58O01SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



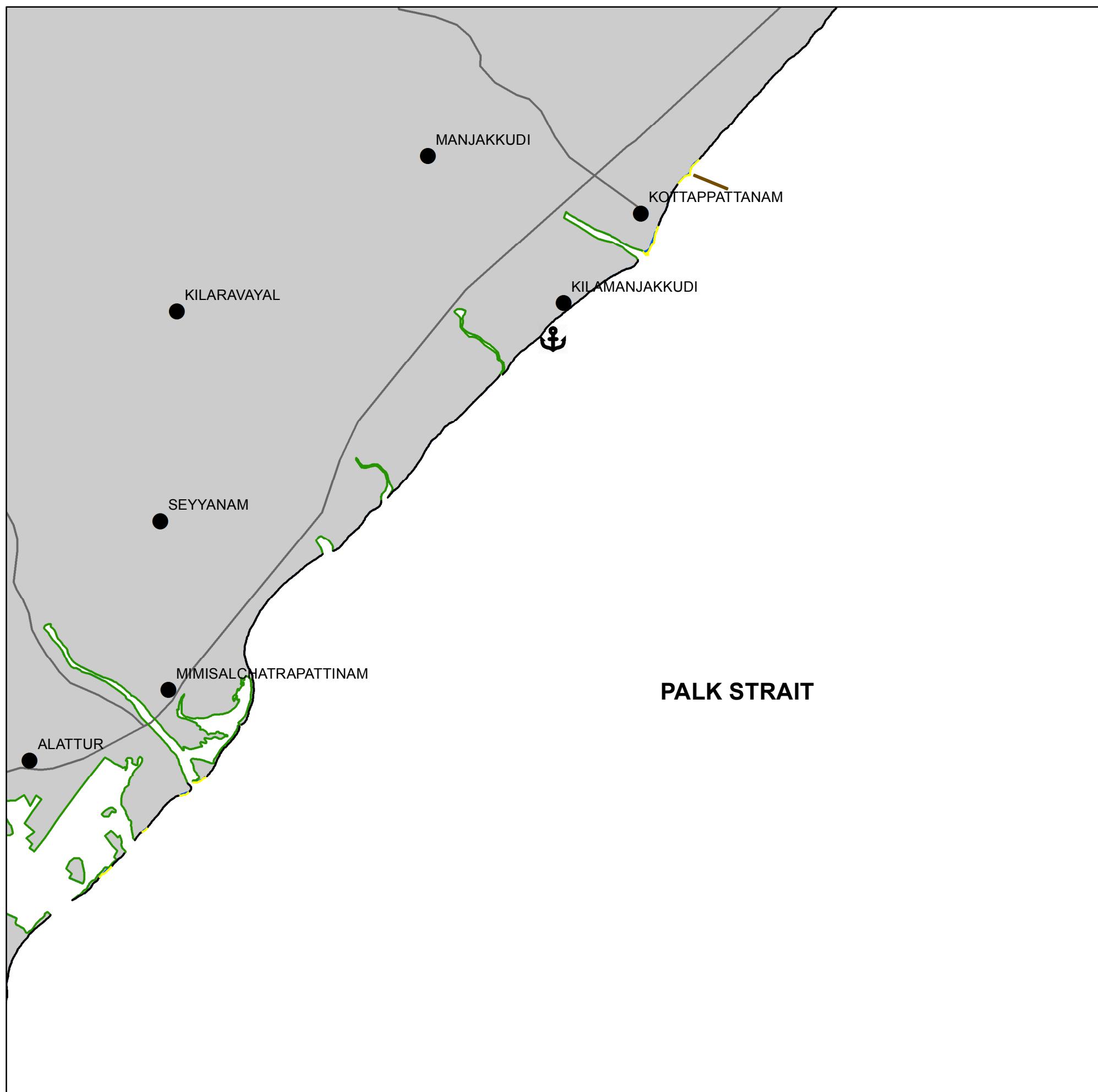
# SHORELINE CHANGE MAP

PUDUKKOTTAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58001NE



## Legend

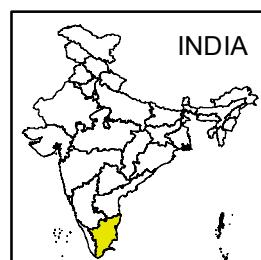
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58N04SW	58N04SE	58N08SW
58001NW	58001NE	SEA
58001SW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



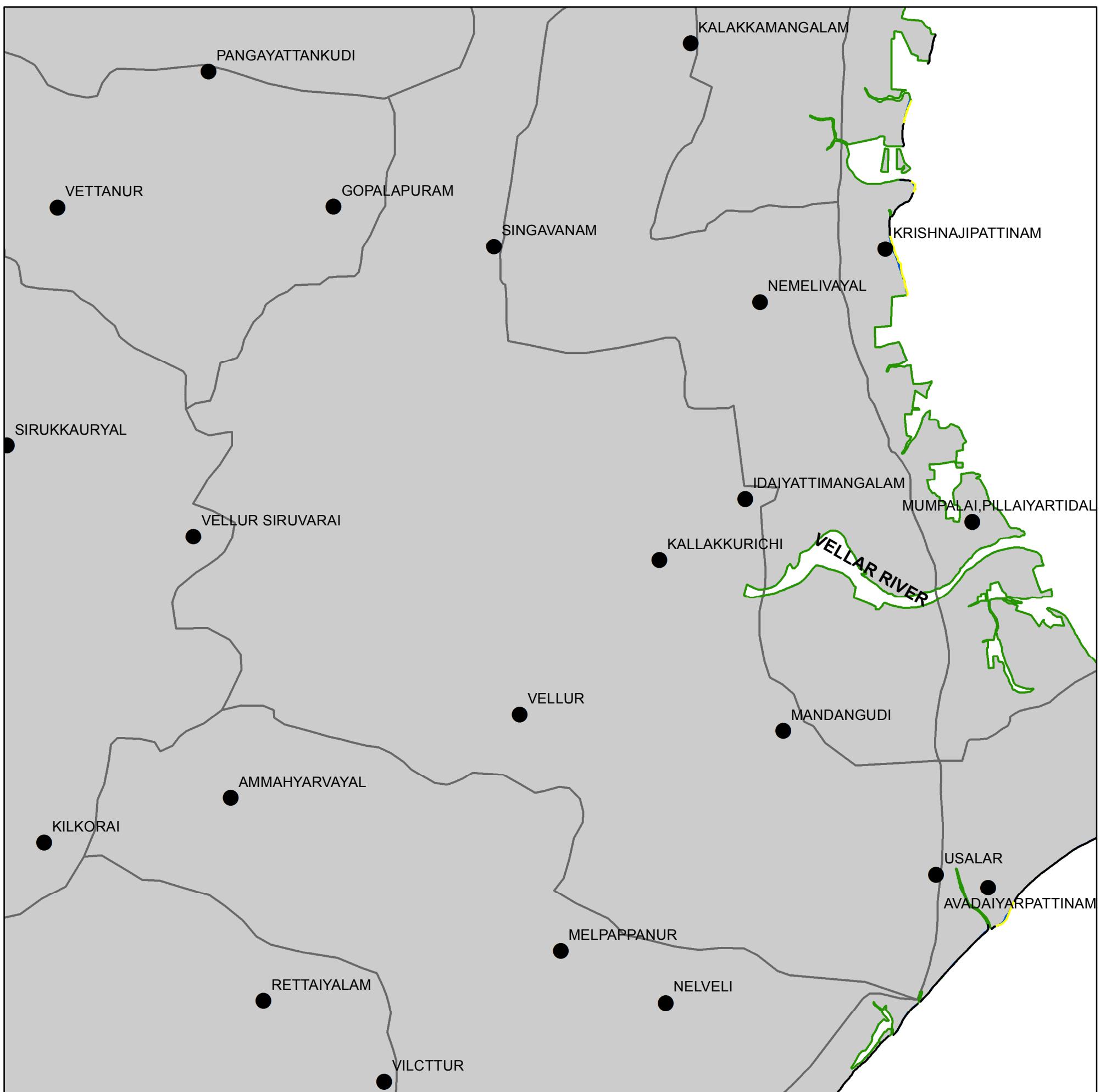
# SHORELINE CHANGE MAP

PUDUKKOTTAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58N04SE



## Legend

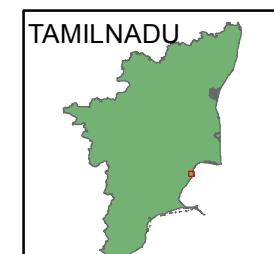
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

58N04NW	58N04NE	58N08NW
58N04SW	58N04SE	58N08SW
58001NW	58001NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

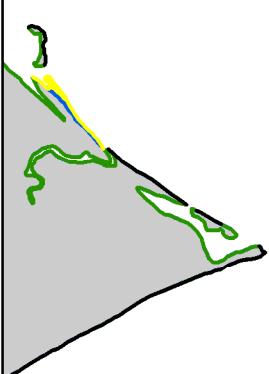
PUDUKKOTTAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

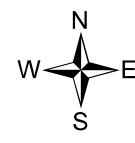
SHEET NO. 58N08SW

PALK STRAIT



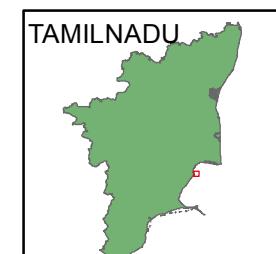
## Legend

- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- HABITATION



0 2 km

INDEX TO SHEETS		
58N04NE	58N08NW	SEA
58N04SE	58N08SW	SEA
58O01NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



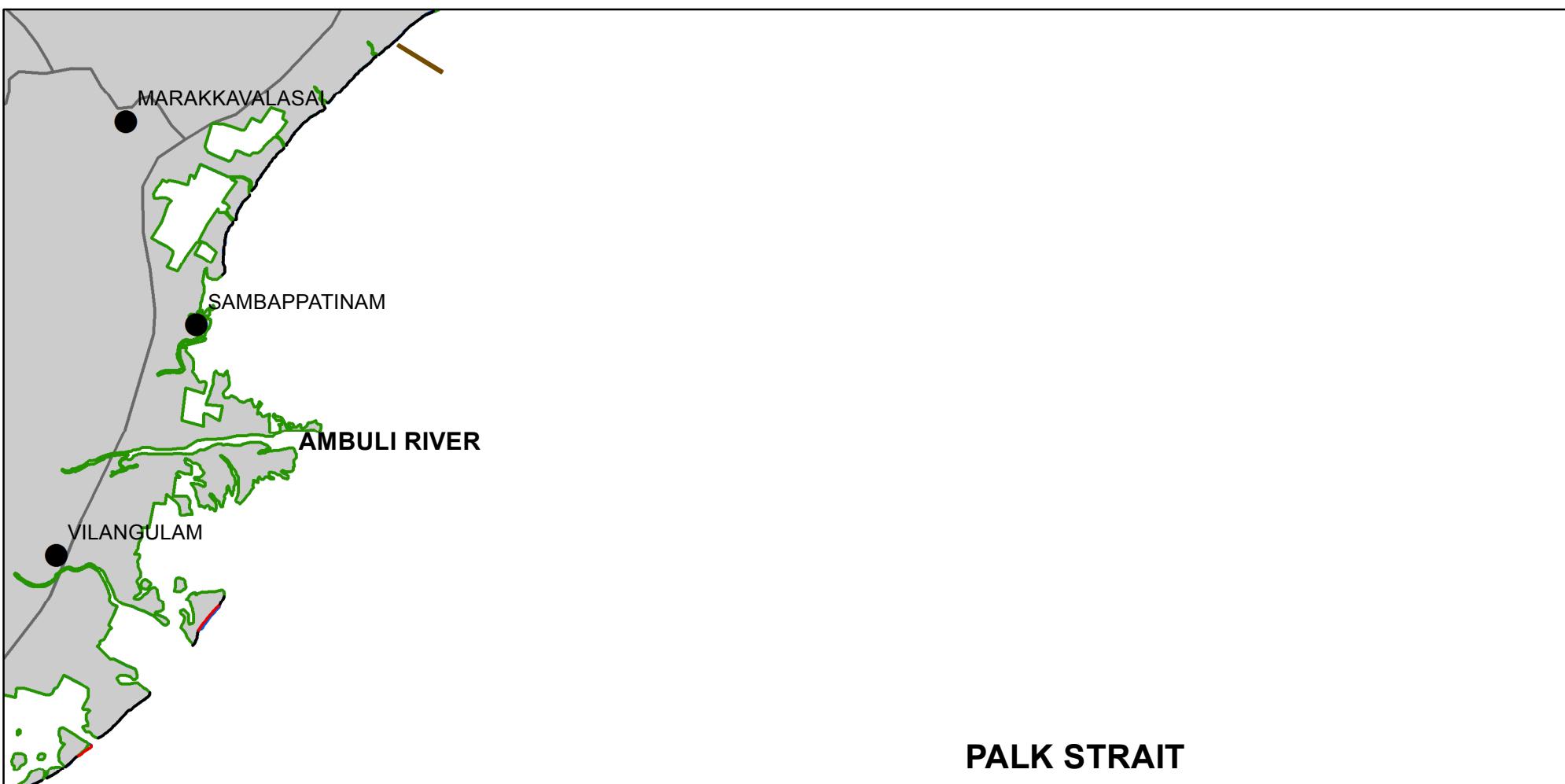
# SHORELINE CHANGE MAP

THANJAVUR DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58N08NW



## Legend

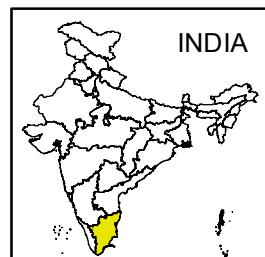
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58N03SE	58N07SW	58N07SE
58N04NE	58N08NW	SEA
58N04SE	58N08SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



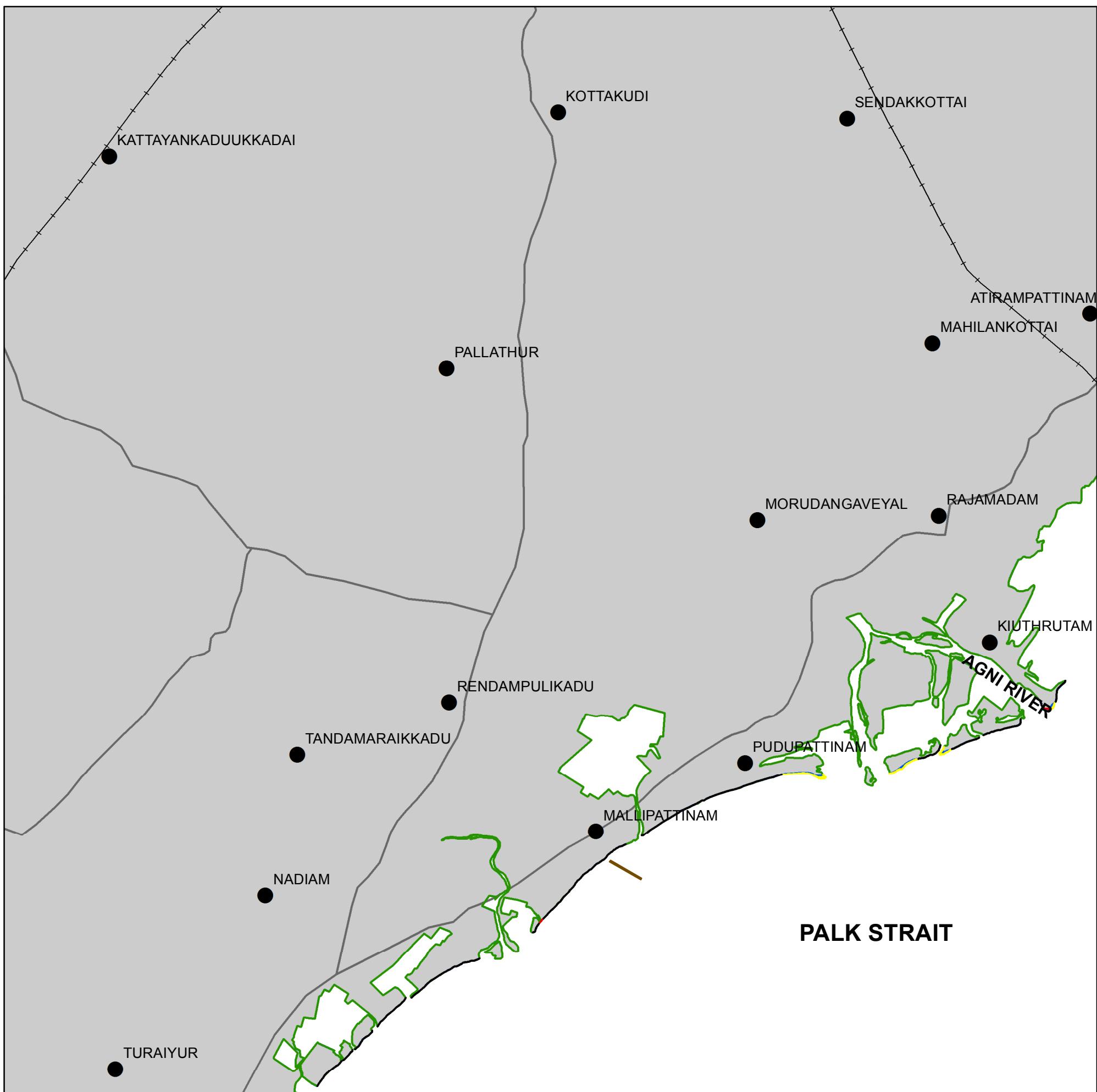
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

THANJAVUR DISTRICT

TAMILNADU

SHEET NO. 58N07SW



## Legend

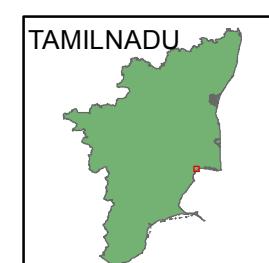
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

58N03NE	58N07NW	58N07NE
58N03SE	58N07SW	58N07SE
58N04NE	58N08NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



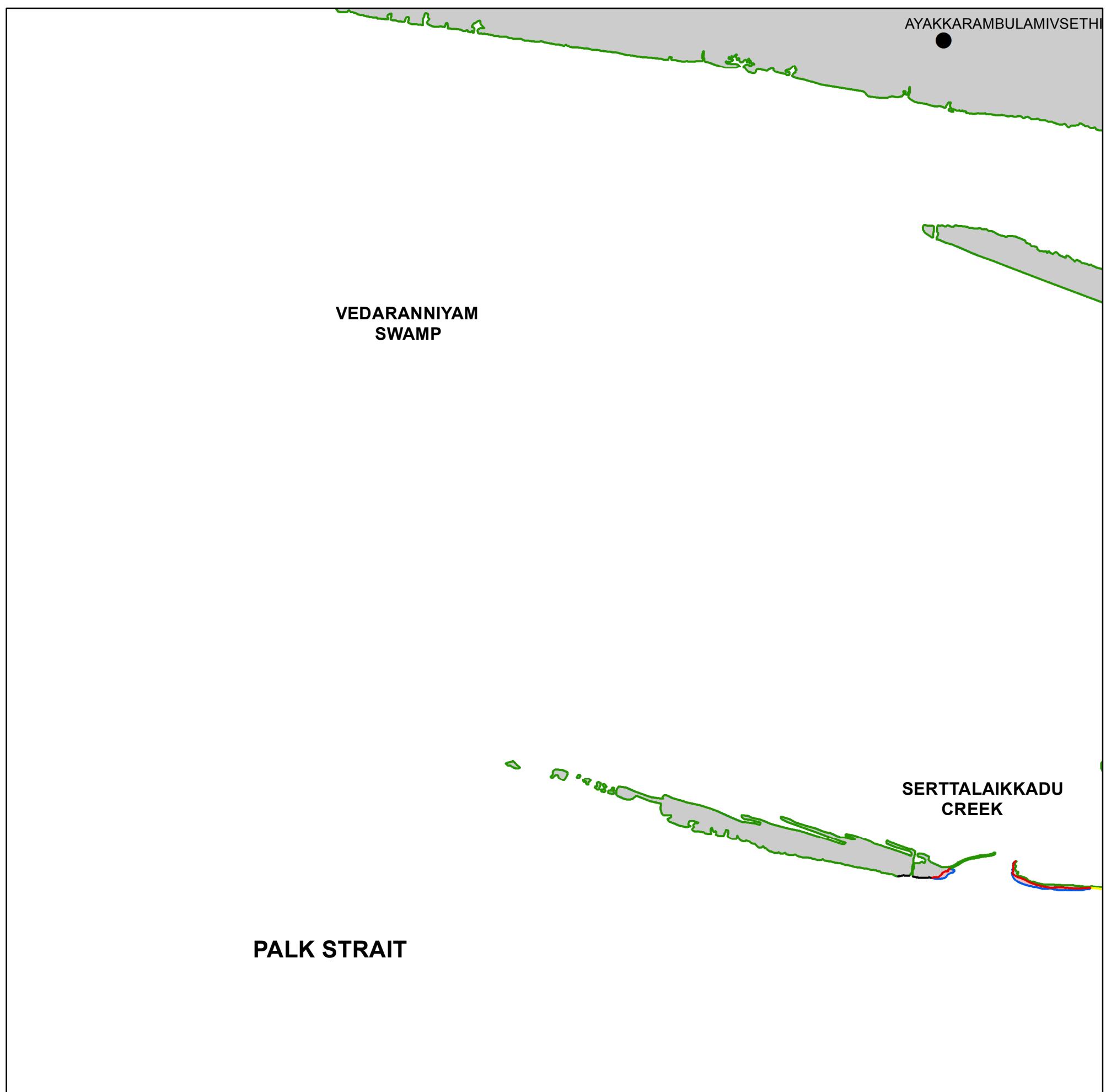
# SHORELINE CHANGE MAP

TIRUVARUR/NAGAPATTINAM  
DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58N11SE



## Legend

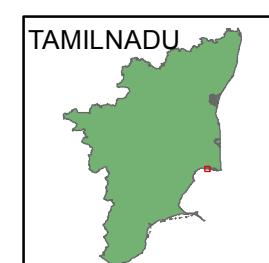
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- HABITATION



0 2 km

## INDEX TO SHEETS

58N07NE	58N11NW	58N11NE
58N07SE	58N11SW	58N11SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



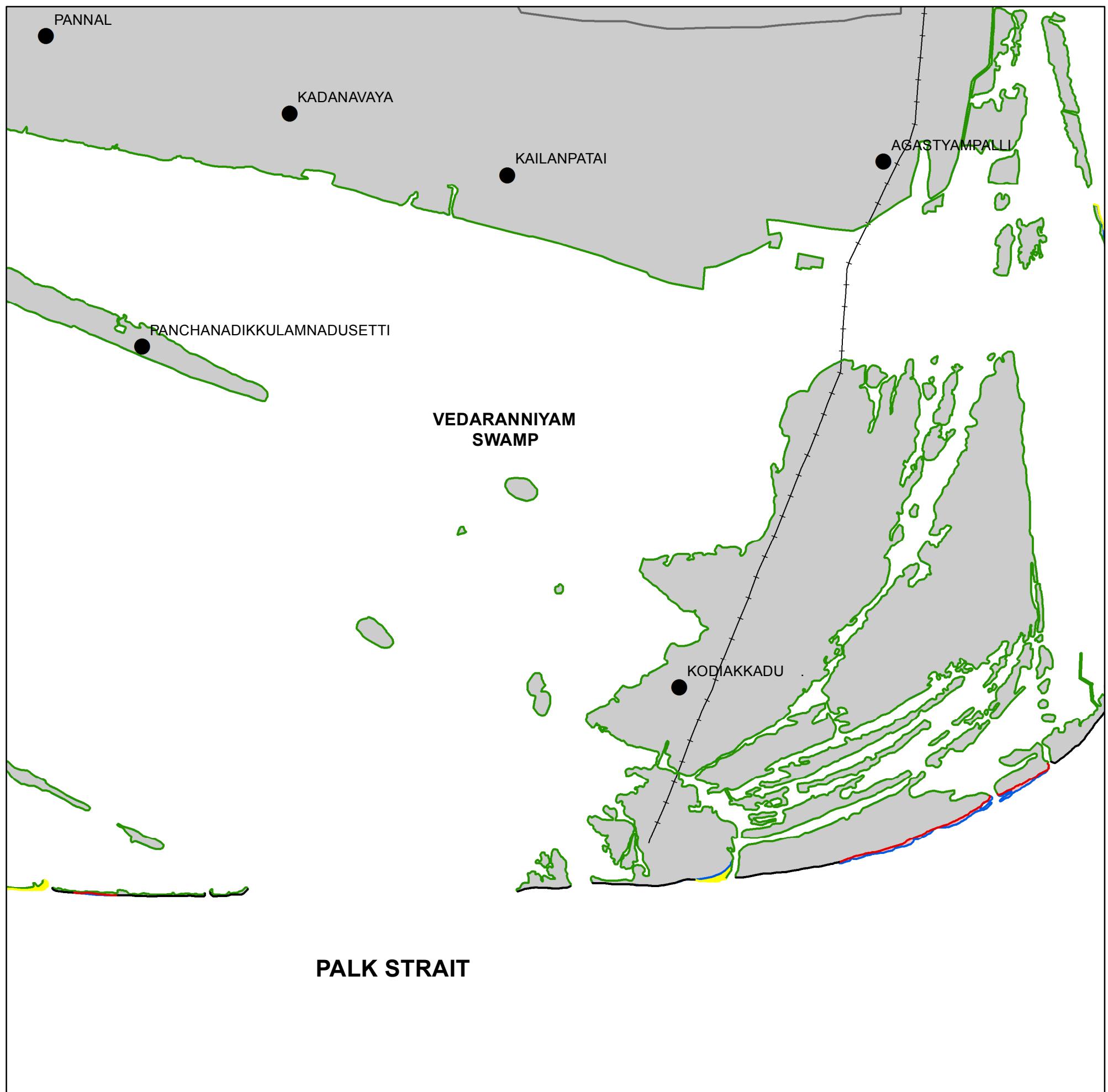
# SHORELINE CHANGE MAP

NAGAPATTINAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58N15SW



## Legend

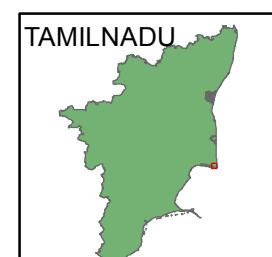
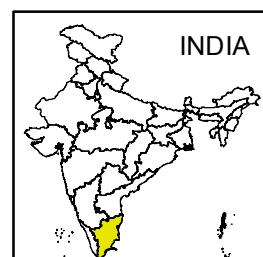
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58N11NE	58N15NW	SEA
58N11SE	58N15SW	58N15SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

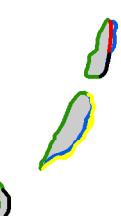
NAGAPATTINAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58N15SE

BAY  
OF  
BENGAL



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km



## INDEX TO SHEETS

58N15NW	SEA	SEA
58N15SW	58N15SE	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



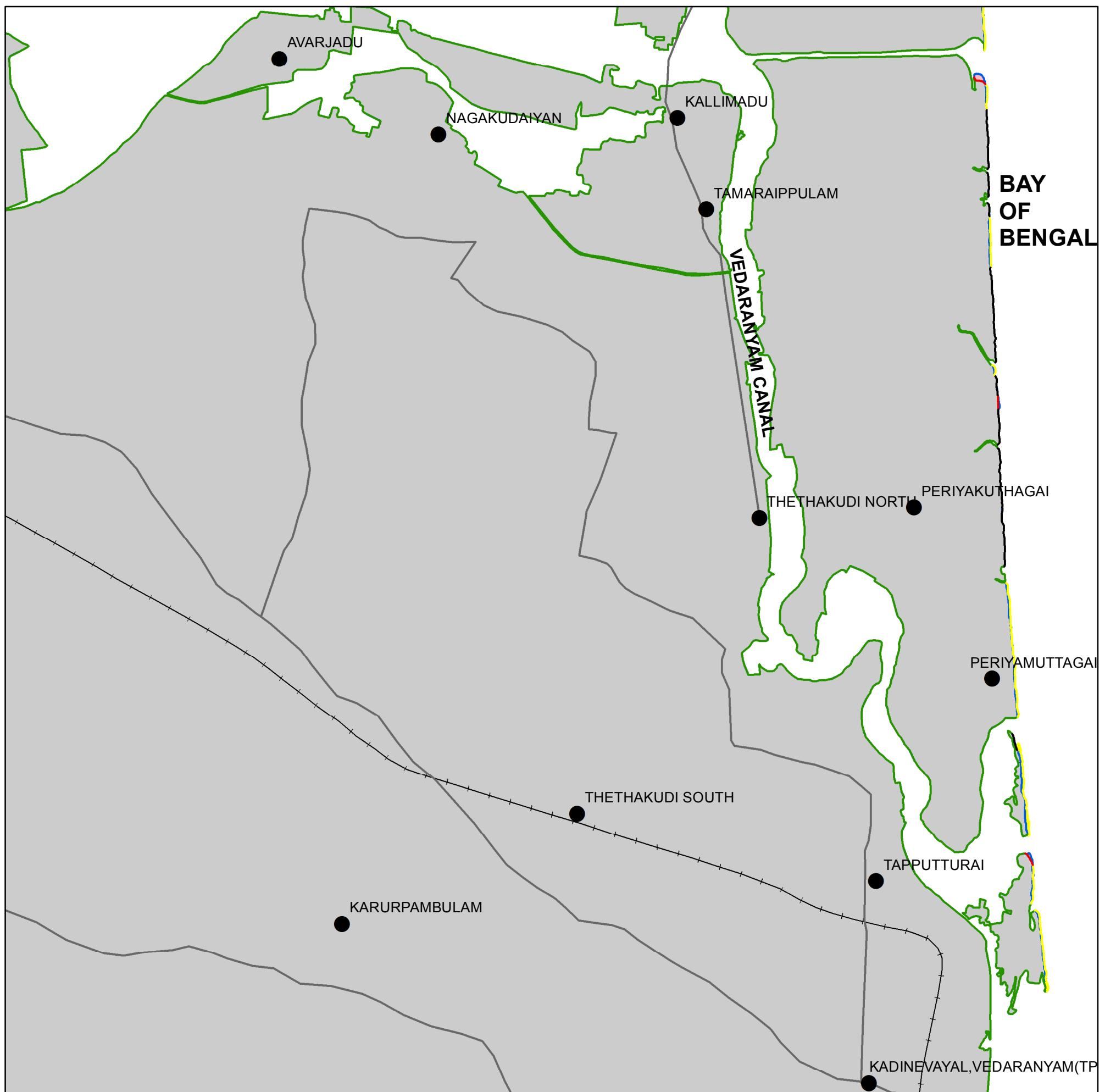
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58N15NW



## Legend

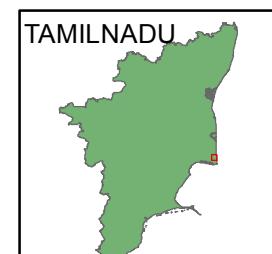
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

58N10SE	58N14SW	SEA
58N11NE	58N15NW	SEA
58N11SE	58N15SW	58N15SE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



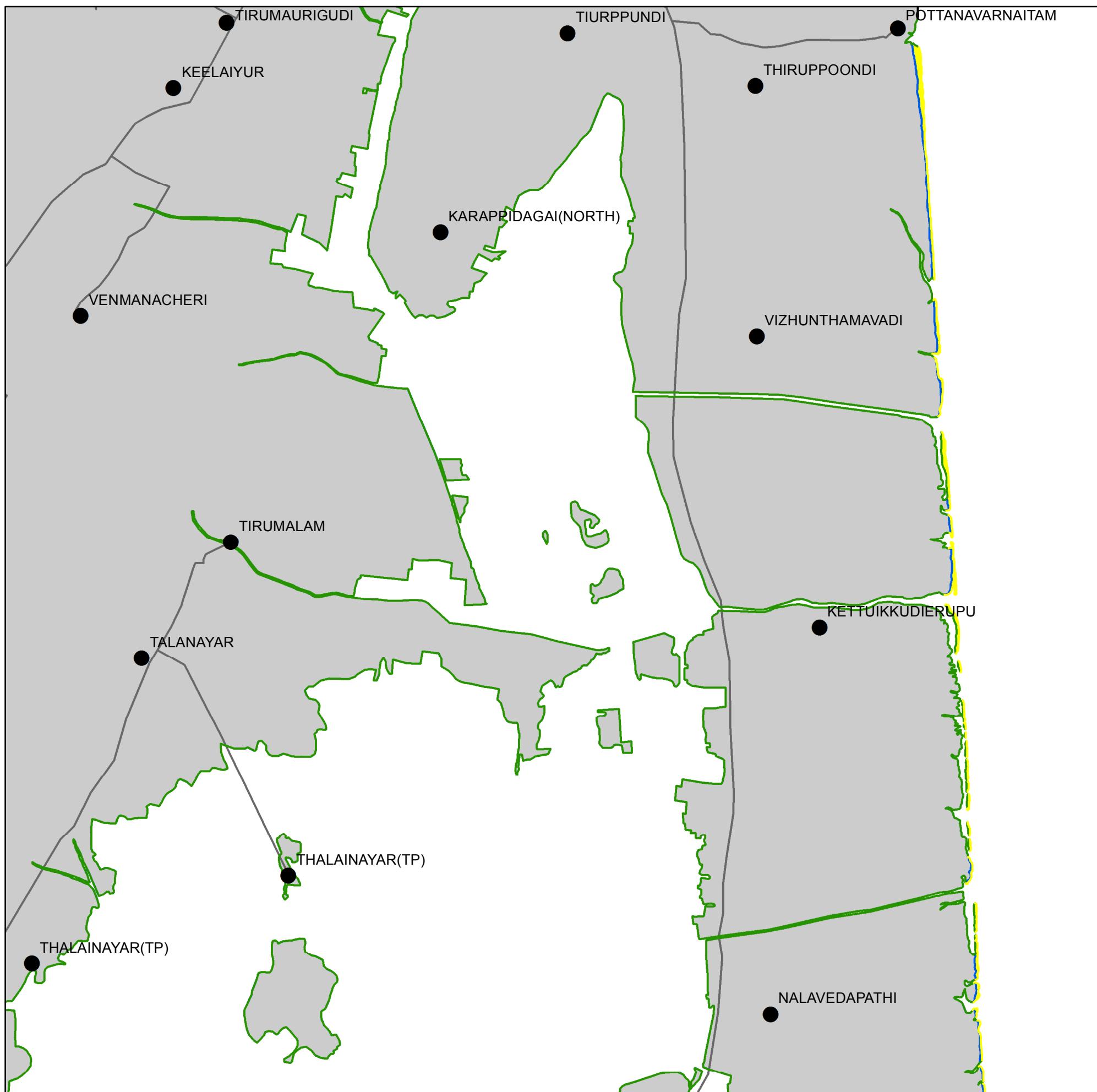
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58N14SW



## Legend

- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- ROAD (Grey line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

58N10NE	58N14NW	SEA
58N10SE	58N14SW	SEA
58N11NE	58N15NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



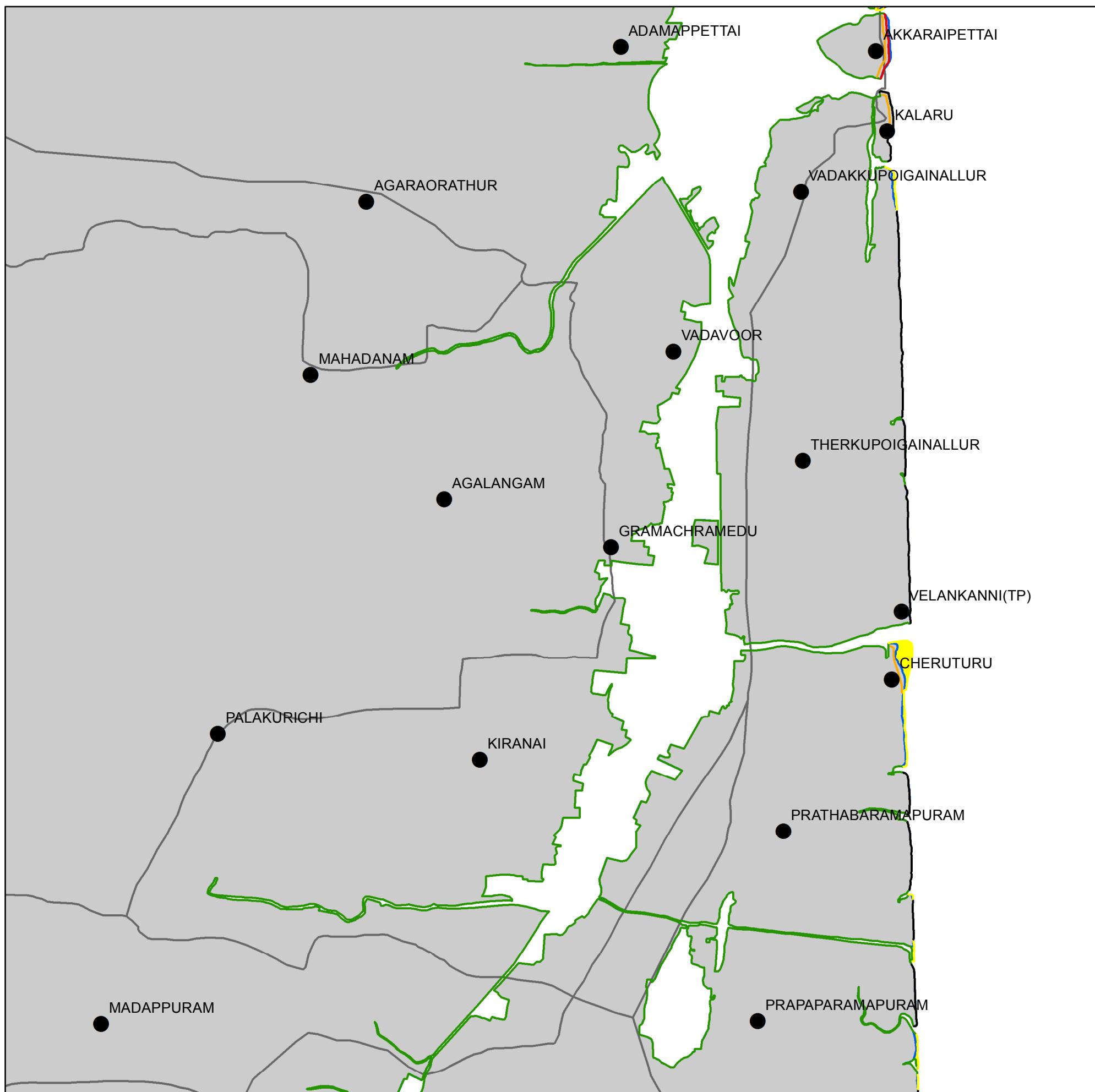
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58N14NW



## Legend

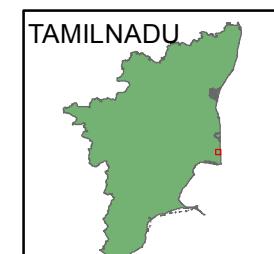
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- HABITATION



0 2 km

## INDEX TO SHEETS

58N10NE	58N14NW	SEA
58N10SE	58N14SW	SEA
58N11NE	58N15NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



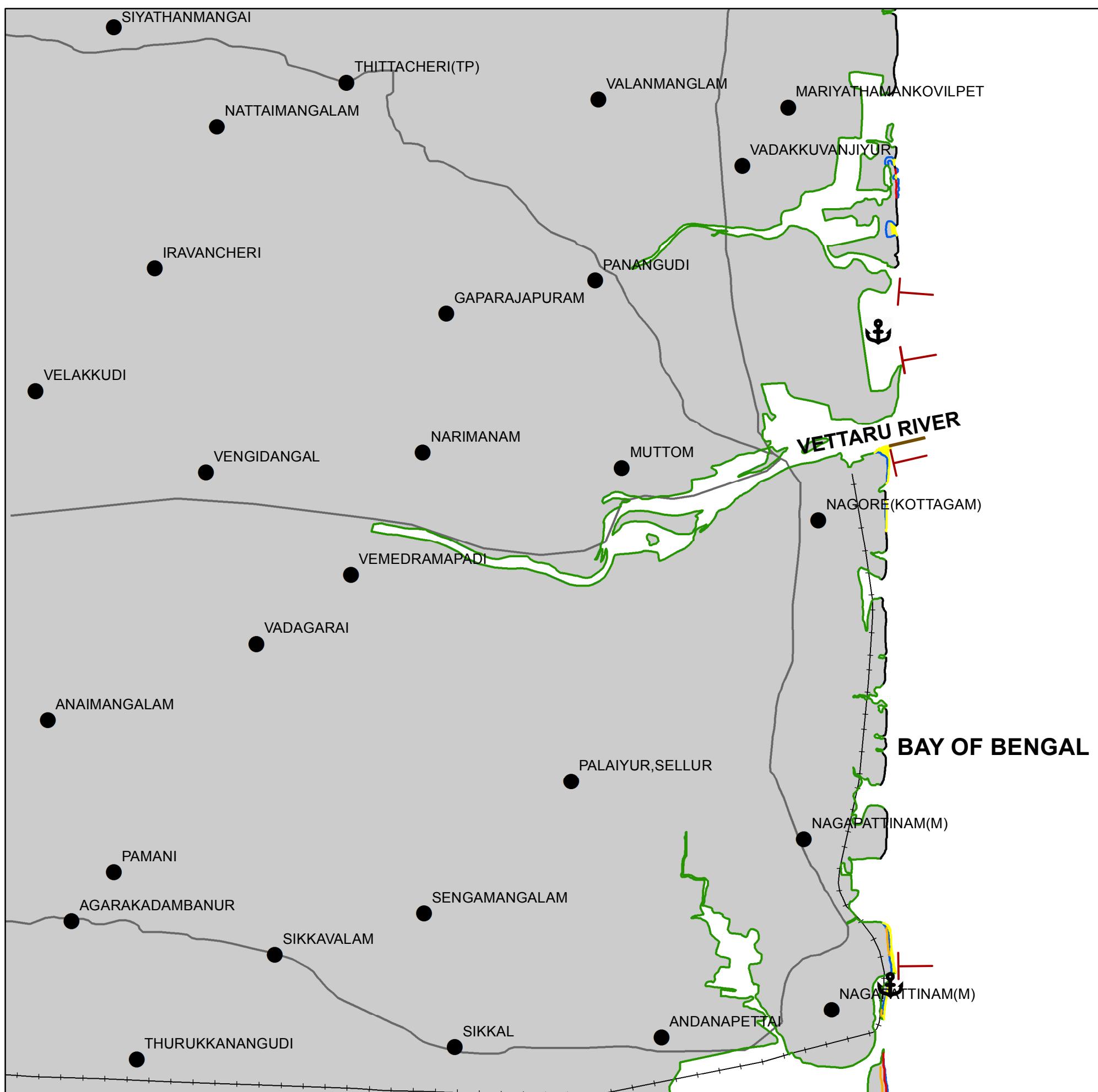
# SHORELINE CHANGE MAP

NAGAPATTINAM & KARAIKAL  
(PUDUCHERRY)

TAMILNADU AND PUDUCHERRY

FOR OFFICIAL USE ONLY

SHEET NO. 58N13SW



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- JETTY
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58N09NE	58N13NW	SEA
58N09SE	58N13SW	SEA
58N10NE	58N14NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



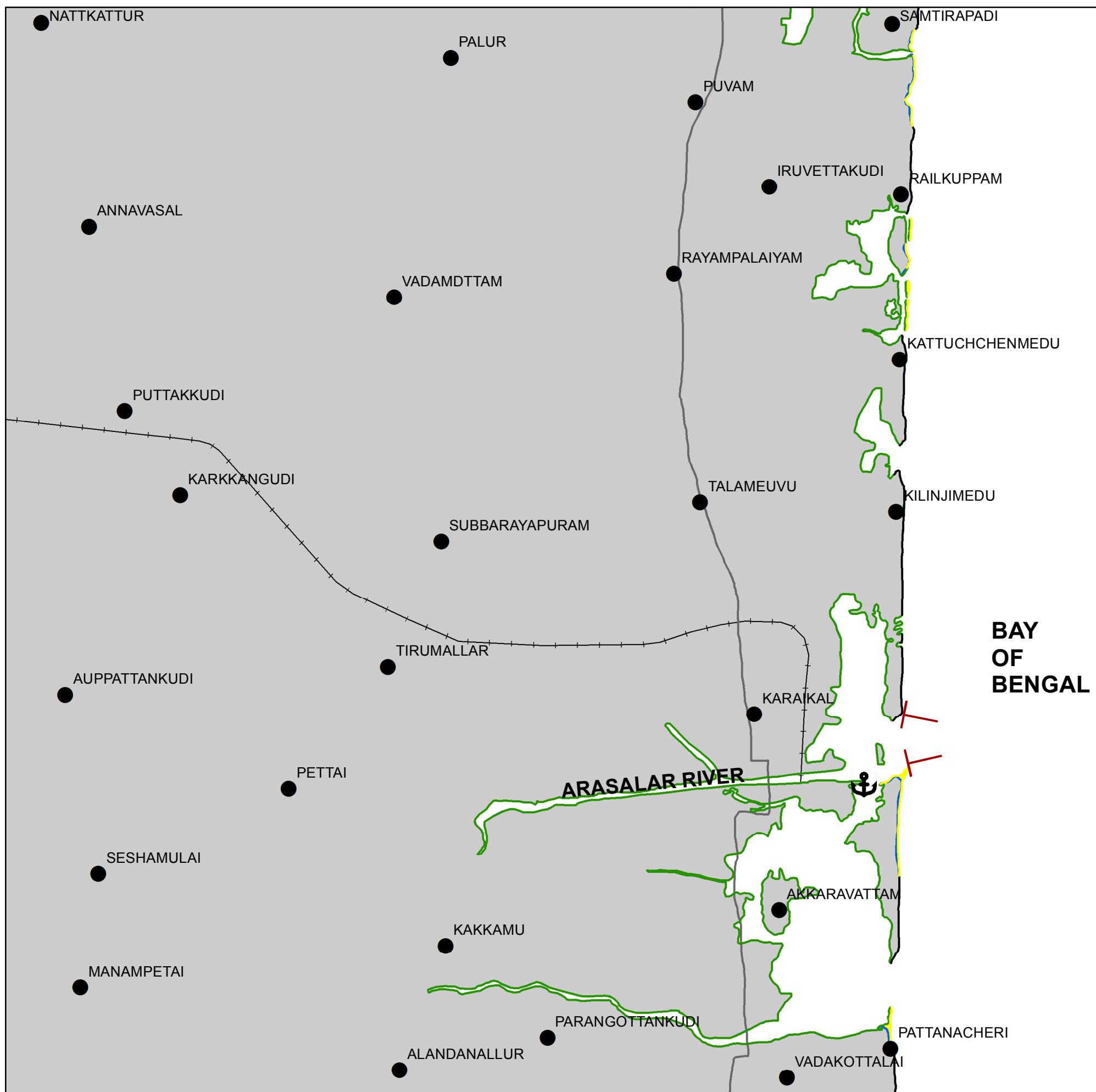
# SHORELINE CHANGE MAP

NAGAPATTINAM & KARAIKAL  
(PUDUCHERRY)

FOR OFFICIAL USE ONLY

**TAMILNADU AND PUDUCHERRY**

SHEET NO. 58N13NW

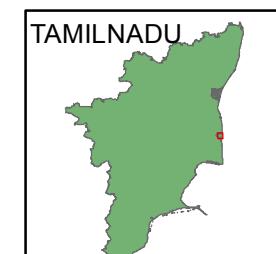


## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



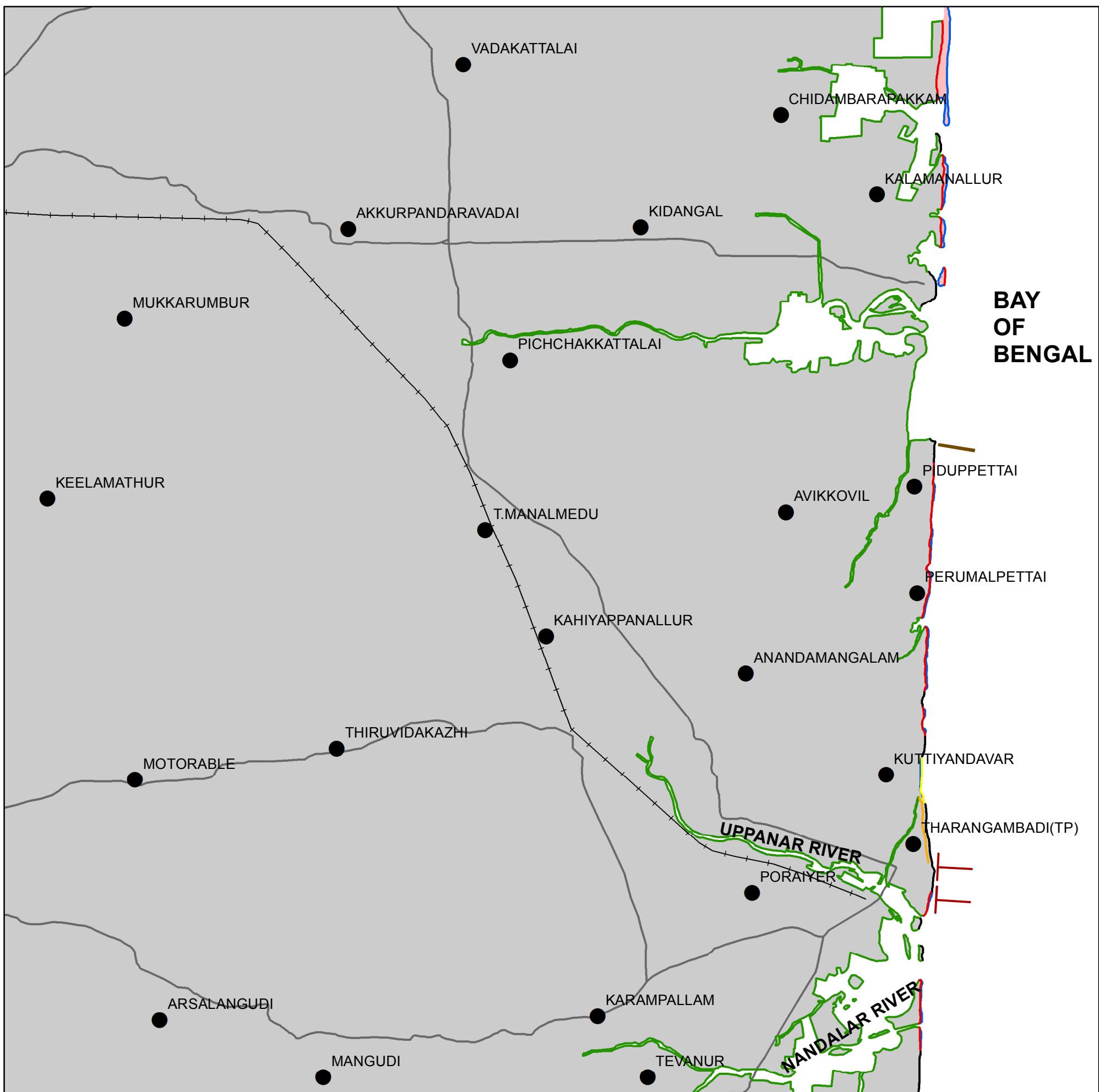
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58M16SW



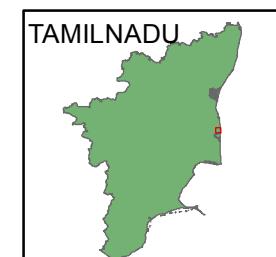
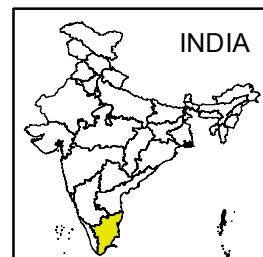
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- JETTY
- HABITATION



0 2 km

58M12NE	58M16NW	SEA
58M12SE	58M16SW	SEA
58N09NE	58N13NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



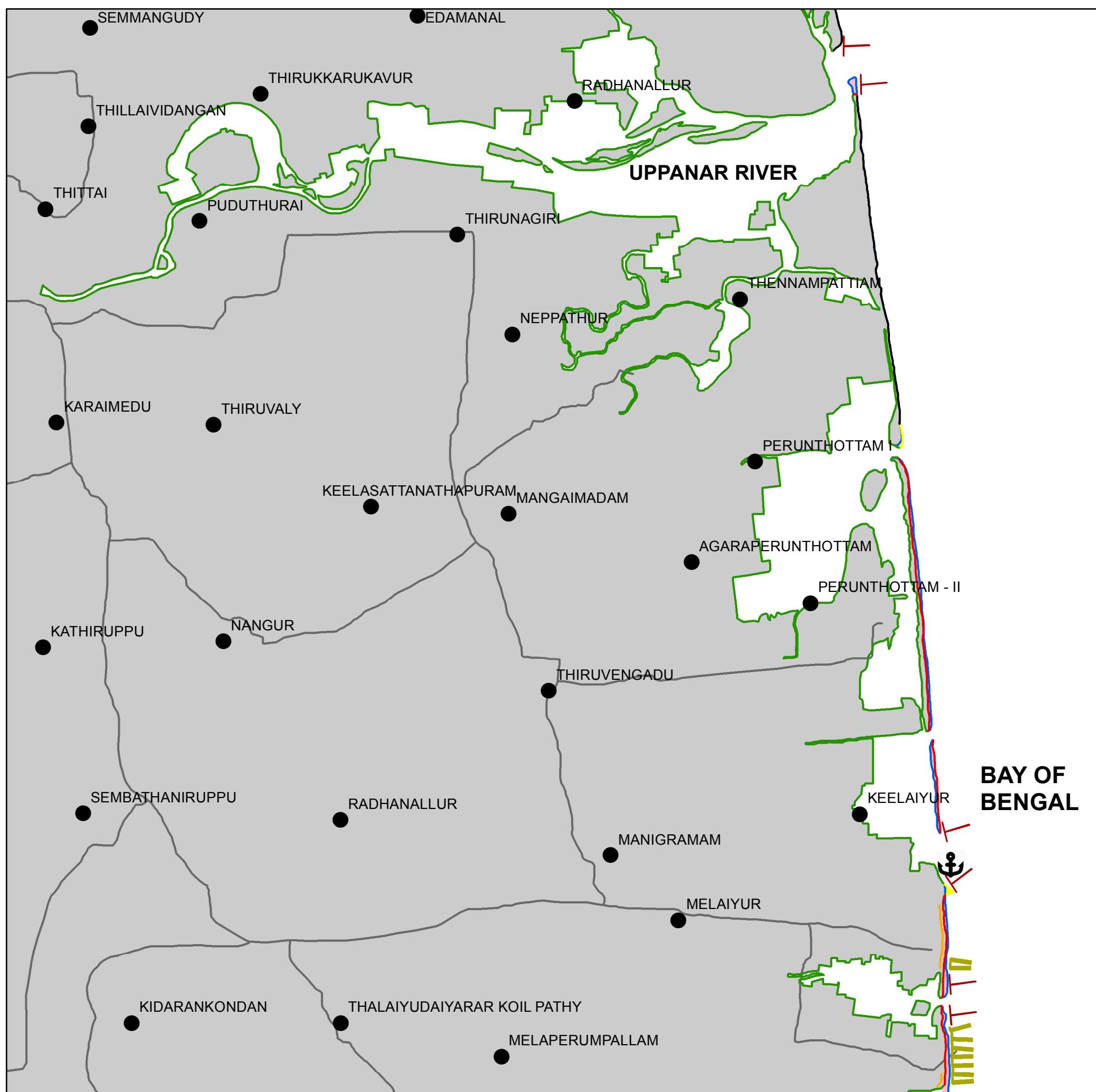
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58M16NW



## Legend

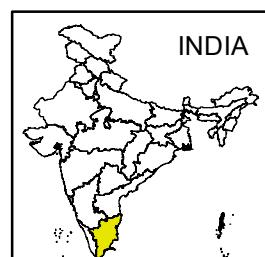
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- ||| GROYNES
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

58M11SE	58M15SW	SEA
58M12NE	58M16NW	SEA
58M12SE	58M16SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



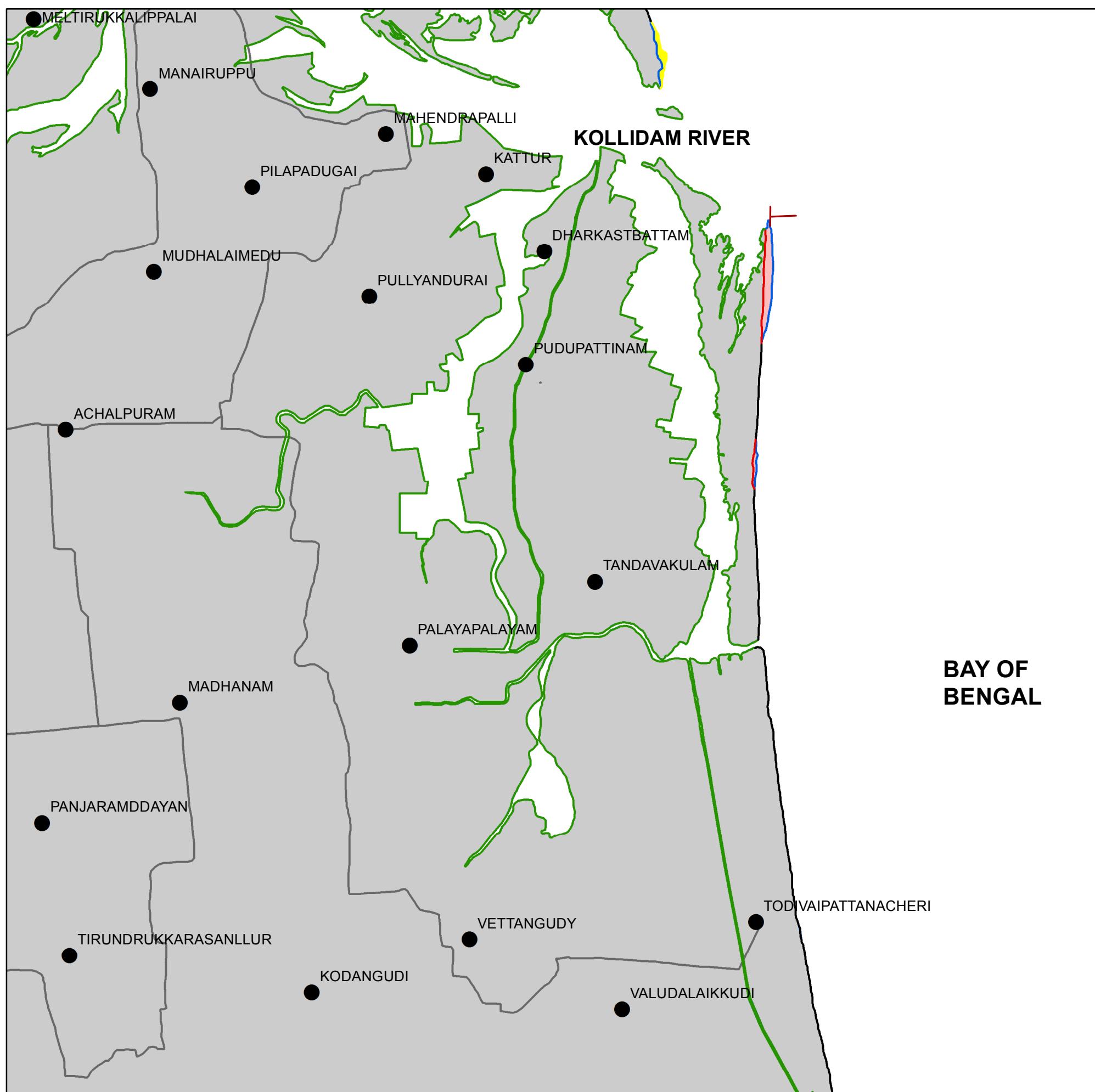
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NAGAPATTINAM DISTRICT

TAMILNADU

SHEET NO. 58M15SW



## Legend

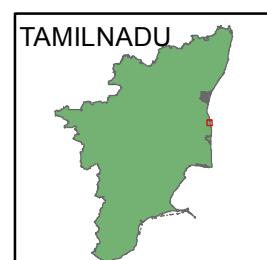
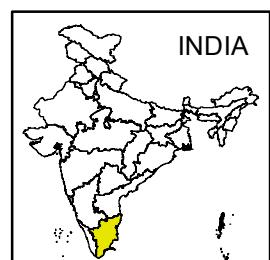
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

58M11NE	58M15NW	SEA
58M11SE	58M15SW	SEA
58M12NE	58M16NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

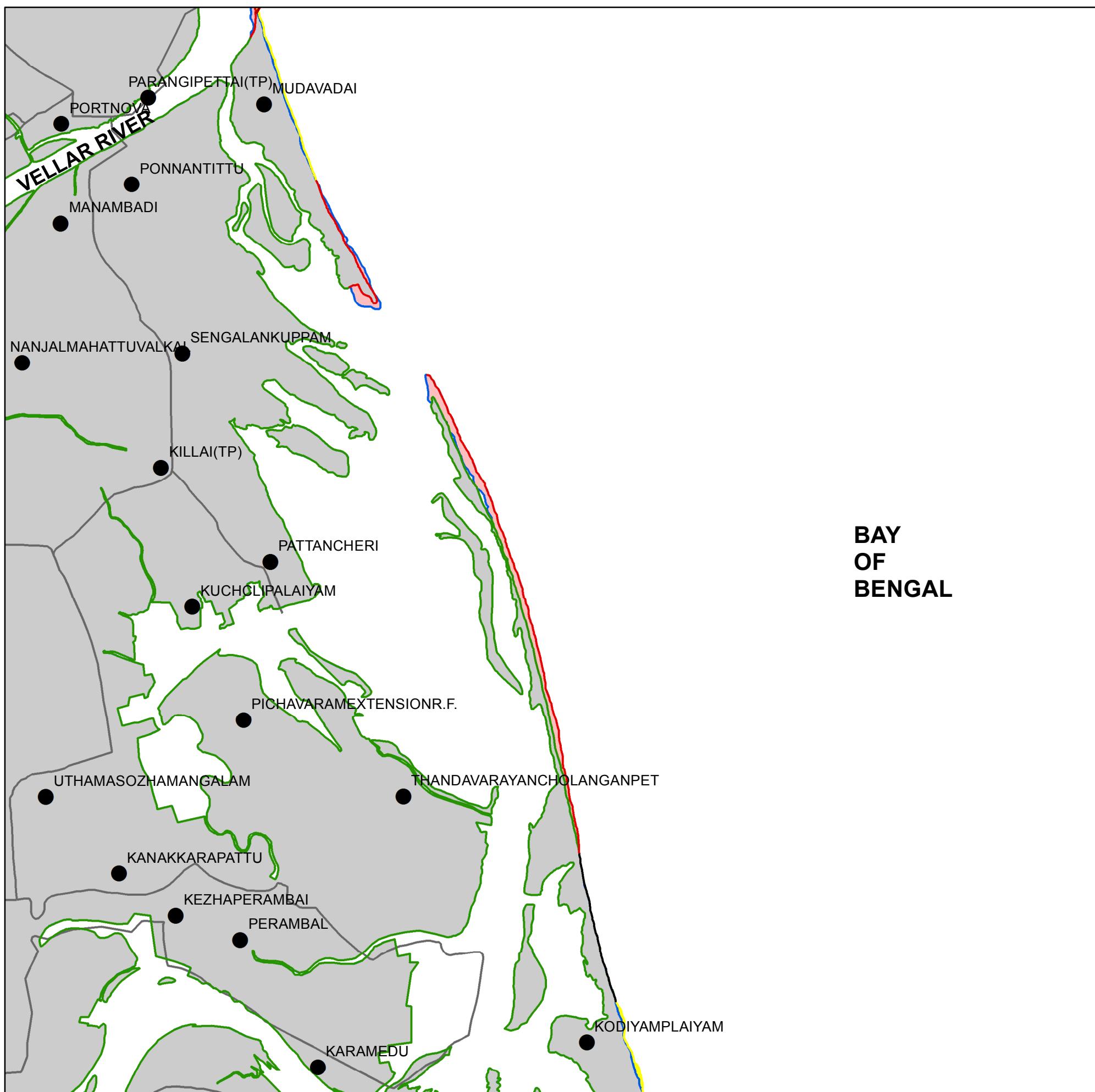


# SHORELINE CHANGE MAP

NAGAPATTINAM  
CUDDALORE DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY  
SHEET NO. 58M15NW



BAY  
OF  
BENGAL

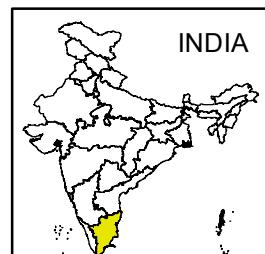
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

58M10SE	58M14SW	58M14SE
58M11NE	58M15NW	SEA
58M11SE	58M15SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



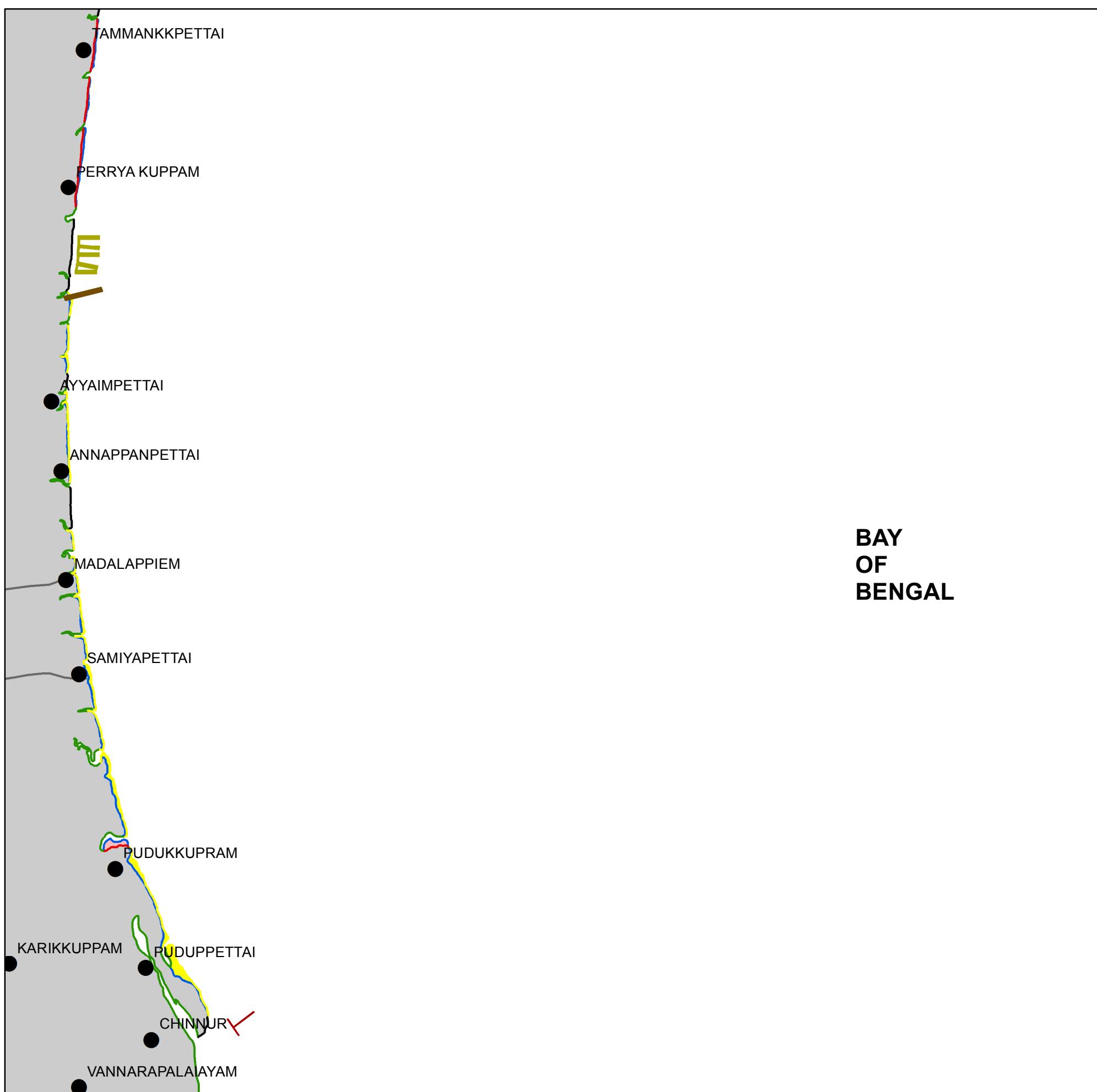
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

CUDDALORE DISTRICT

TAMILNADU

SHEET NO. 58M14SW



## Legend

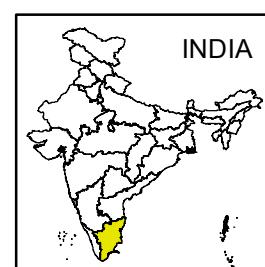
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- GROYNES
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

58M10NE	58M14NW	SEA
58M10SE	58M14SW	SEA
58M11NE	58M15NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

CUDDALORE DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 58M14NW



## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +— RAILWAY
- SEAWALL
- T— BREAKWATER
- ⚓— PORT/HARBOUR
- HABITATION



0 2 km

INDEX TO SHEETS		
58M09SE	58M13SW	SEA
58M10NE	58M14NW	SEA
58M10SE	58M14SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

CUDDALORE & PUDUCHERRY  
DISTRICT

FOR OFFICIAL USE ONLY

## TAMILNADU AND PUDUCHERRY

SHEET NO. 58M13SW



### Legend

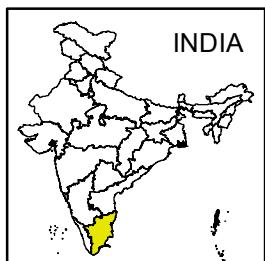
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEAWALL
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

### INDEX TO SHEETS

58M09NE	58M13NW	SEA
58M09SE	58M13SW	SEA
58M10NE	58M14NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



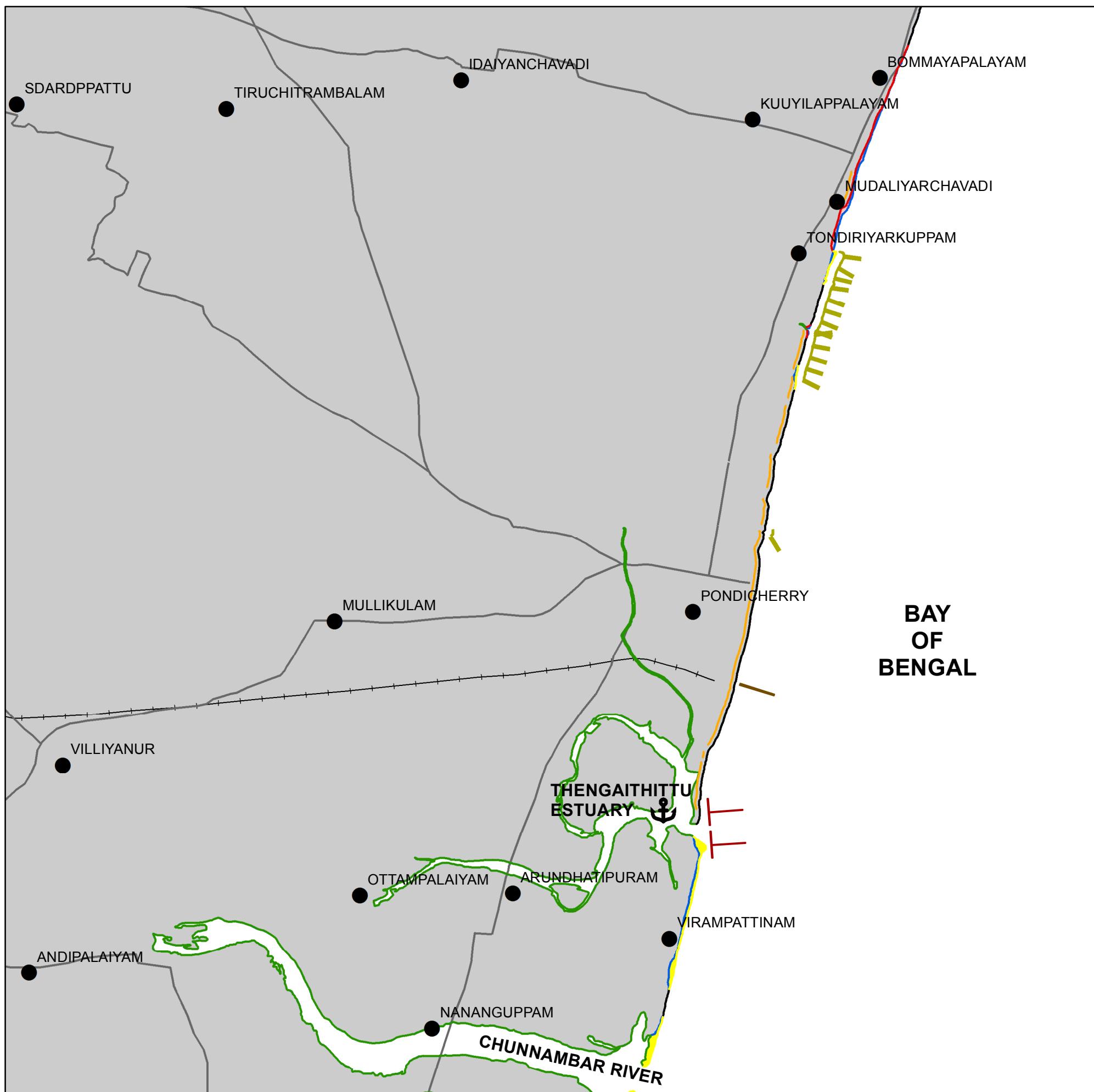
# SHORELINE CHANGE MAP

VILUPPURAM & PUDUCHERRY DISTRICT

TAMILNADU AND PUDUCHERRY

FOR OFFICIAL USE ONLY

SHEET NO. 58M13NW



## Legend

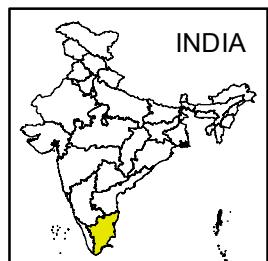
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +— RAILWAY
- SEA WALL
- ||||| GROYNES
- |— BREAKWATER
- JETTY
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

57P12SE	57P16SW	57P16SE
58M09NE	58M13NW	SEA
58M09SE	58M13SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

VILUPPURAM & PUDUCHERRY  
DISTRICT

**TAMILNADU AND PUDUCHERRY**

FOR OFFICIAL USE ONLY

SHEET NO. 57P16SW



## Legend

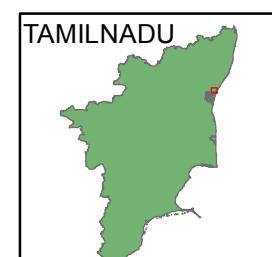
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

57P12NE	57P16NW	57P16NE
57P12SE	57P16SW	57P16SE
58M09NE	58M13NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

VILUPPURAM DISTRICT

TAMILNADU

SHEET NO. 57P16SE



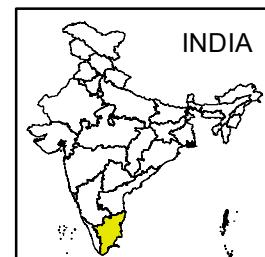
## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

57P16NW	57P16NE	66D04NW
57P16SW	57P16SE	SEA
58M13NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



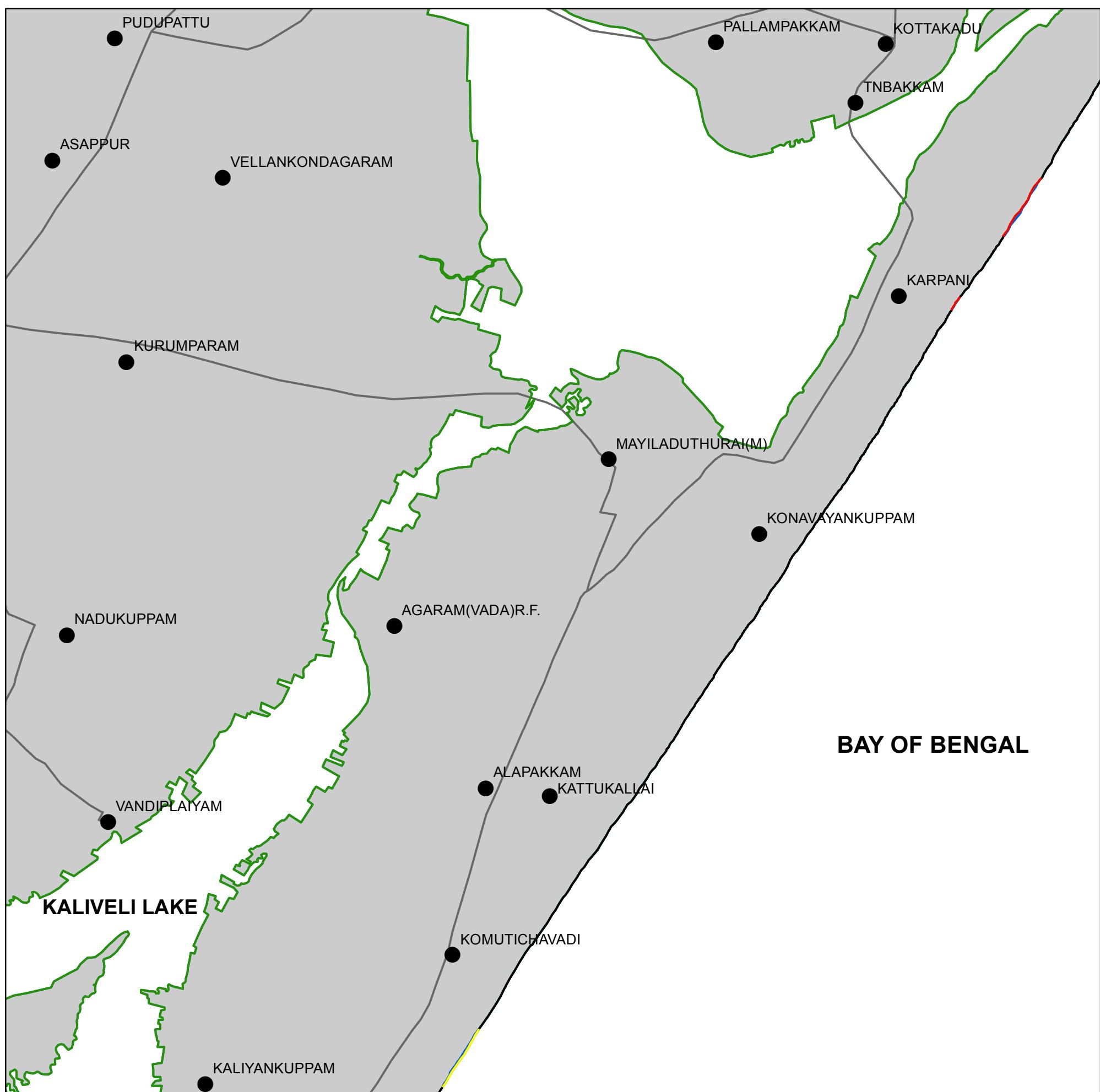
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

VILUPPURAM DISTRICT

TAMILNADU

SHEET NO. 57P16NE



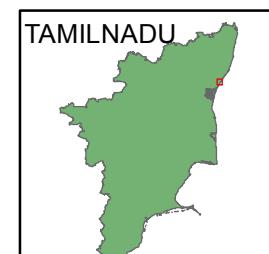
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

57P15SW	57P15SE	66D03SW
57P16NW	57P16NE	66D04NW
57P16SW	57P16SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



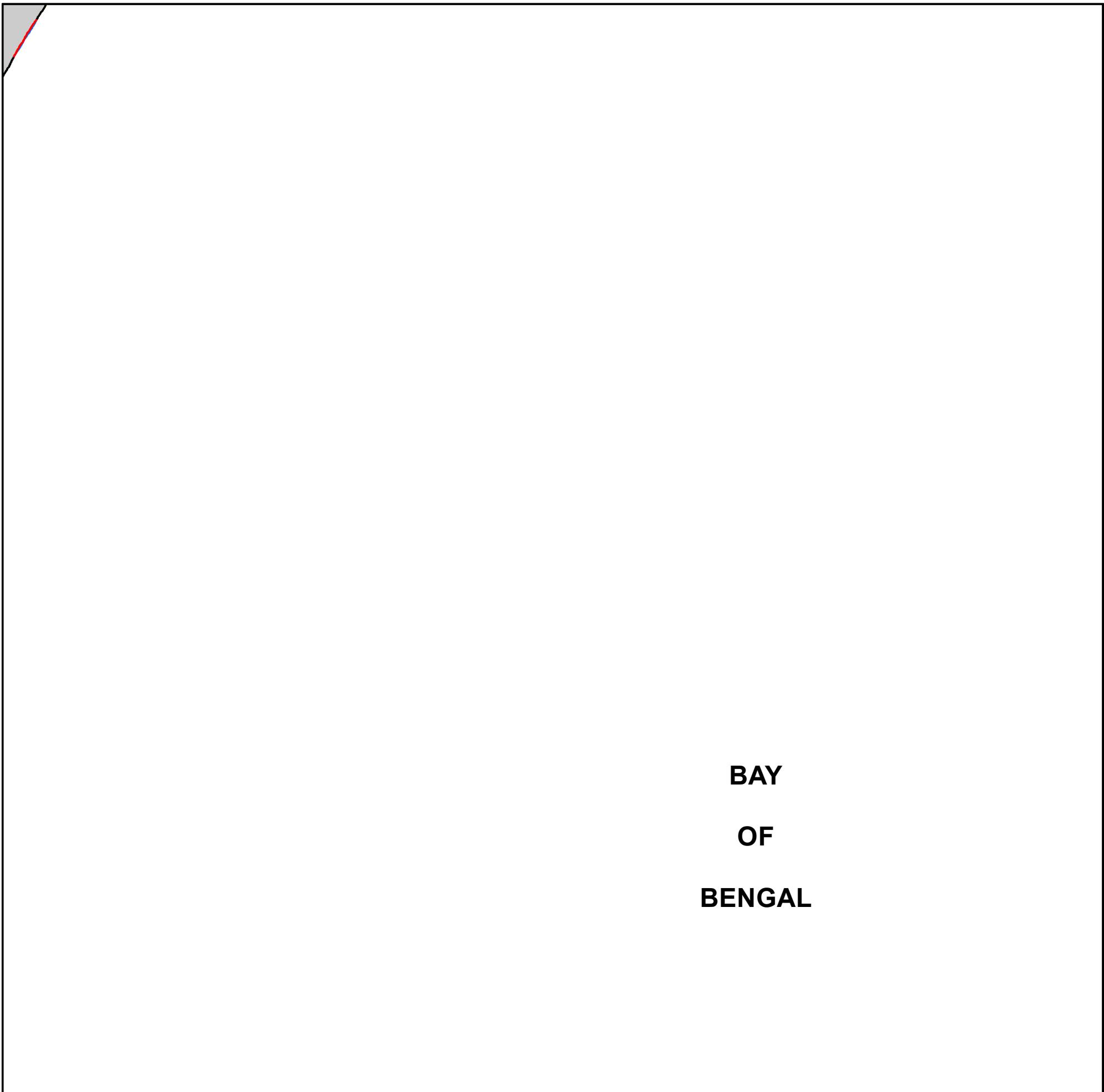
# SHORELINE CHANGE MAP

VILUPPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D04NW



## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE

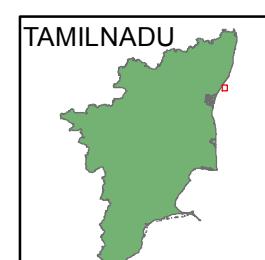


0

2 km

## INDEX TO SHEETS

57P15SE	66D03SW	SEA
57P16NE	66D04NW	SEA
57P16SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



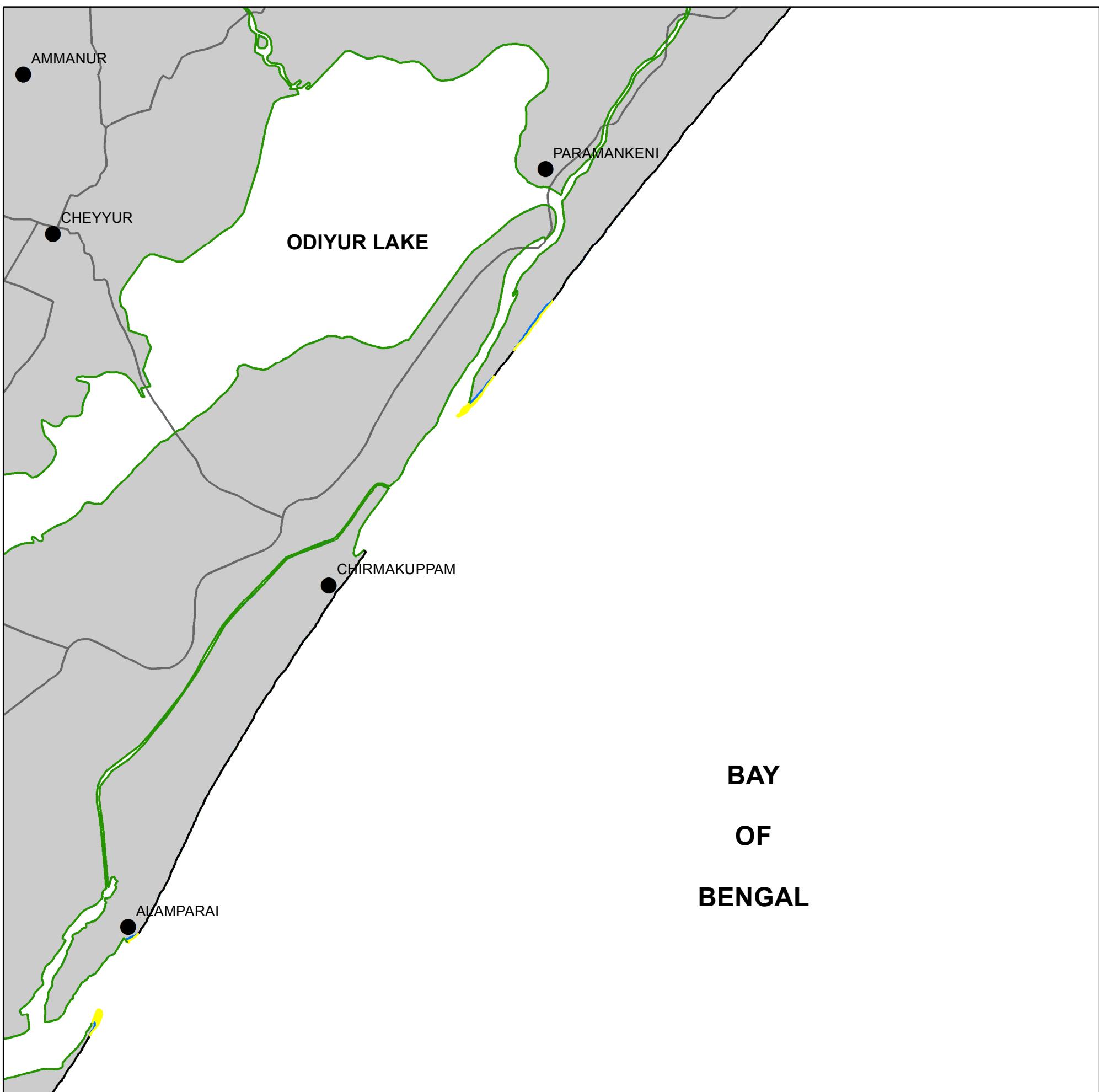
# SHORELINE CHANGE MAP

VILUPPURAM  
KANCHEEPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D03SW



## Legend

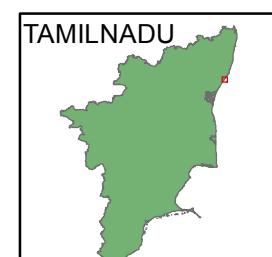
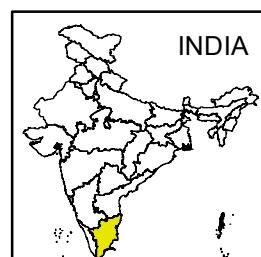
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

57P15NE	66D03NW	66D03NE
57P15SE	66D03SW	SEA
57P16NE	66D04NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



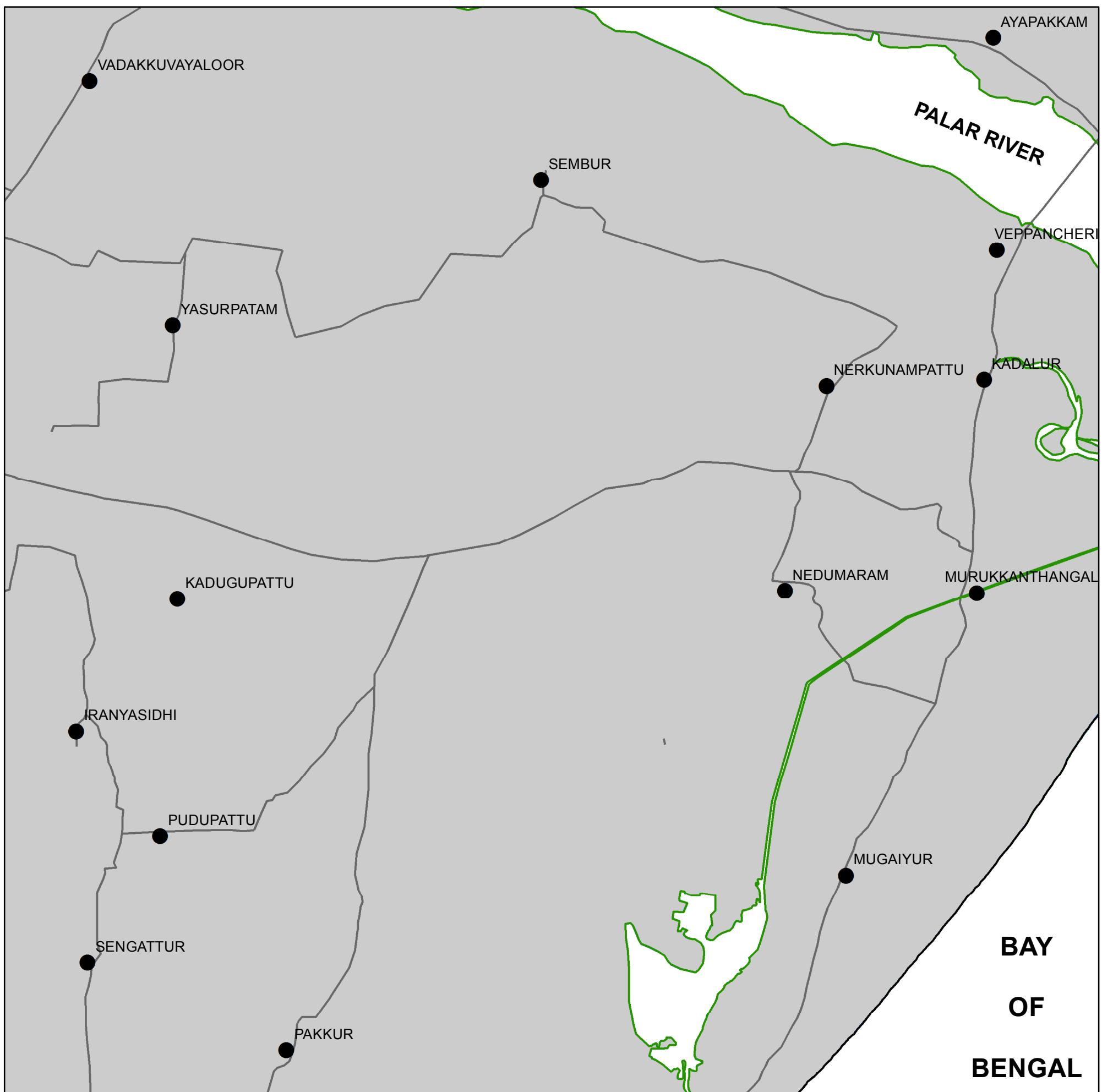
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KANCHEEPURAM DISTRICT

TAMILNADU

SHEET NO. 66D03NW



## Legend

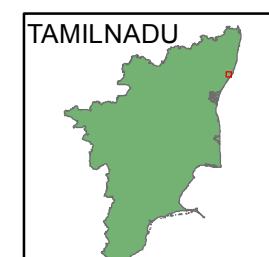
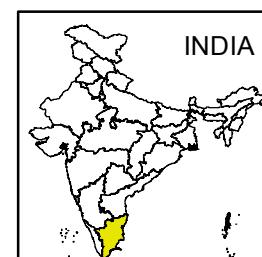
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

57P14SE	66D02SW	66D02SE
57P15NE	66D03NW	66D03NE
57P15SE	66D03SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



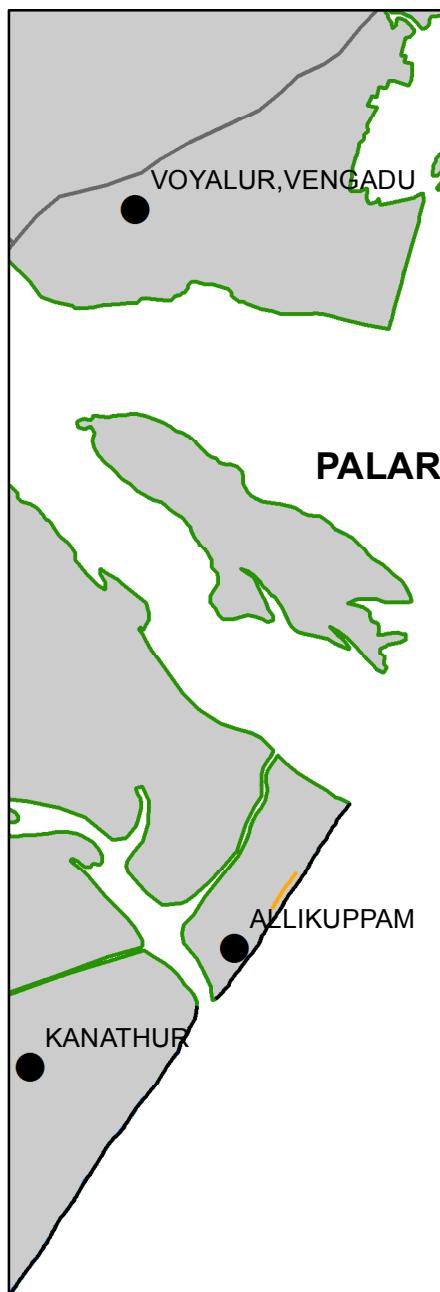
# SHORELINE CHANGE MAP

KANCHEEPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D03NE



BAY  
OF  
BENGAL

## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- HABITATION



0 2 km

## INDEX TO SHEETS

66D02SW	66D02SE	SEA
66D03NW	66D03NE	SEA
66D03SW	66D03SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KANCHEEPURAM DISTRICT

TAMILNADU

SHEET NO. 66D02SE



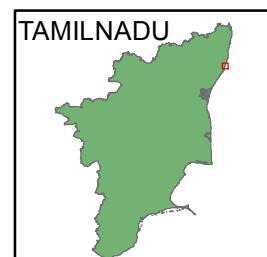
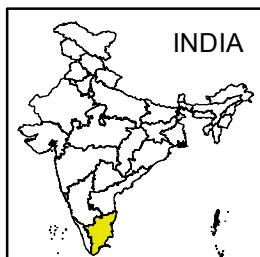
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- JETTY
- BREAKWATER
- HABITATION



0 2 km

INDEX TO SHEETS		
66D02NW	66D02NE	SEA
66D02SW	66D02SE	SEA
66D03NW	66D03NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



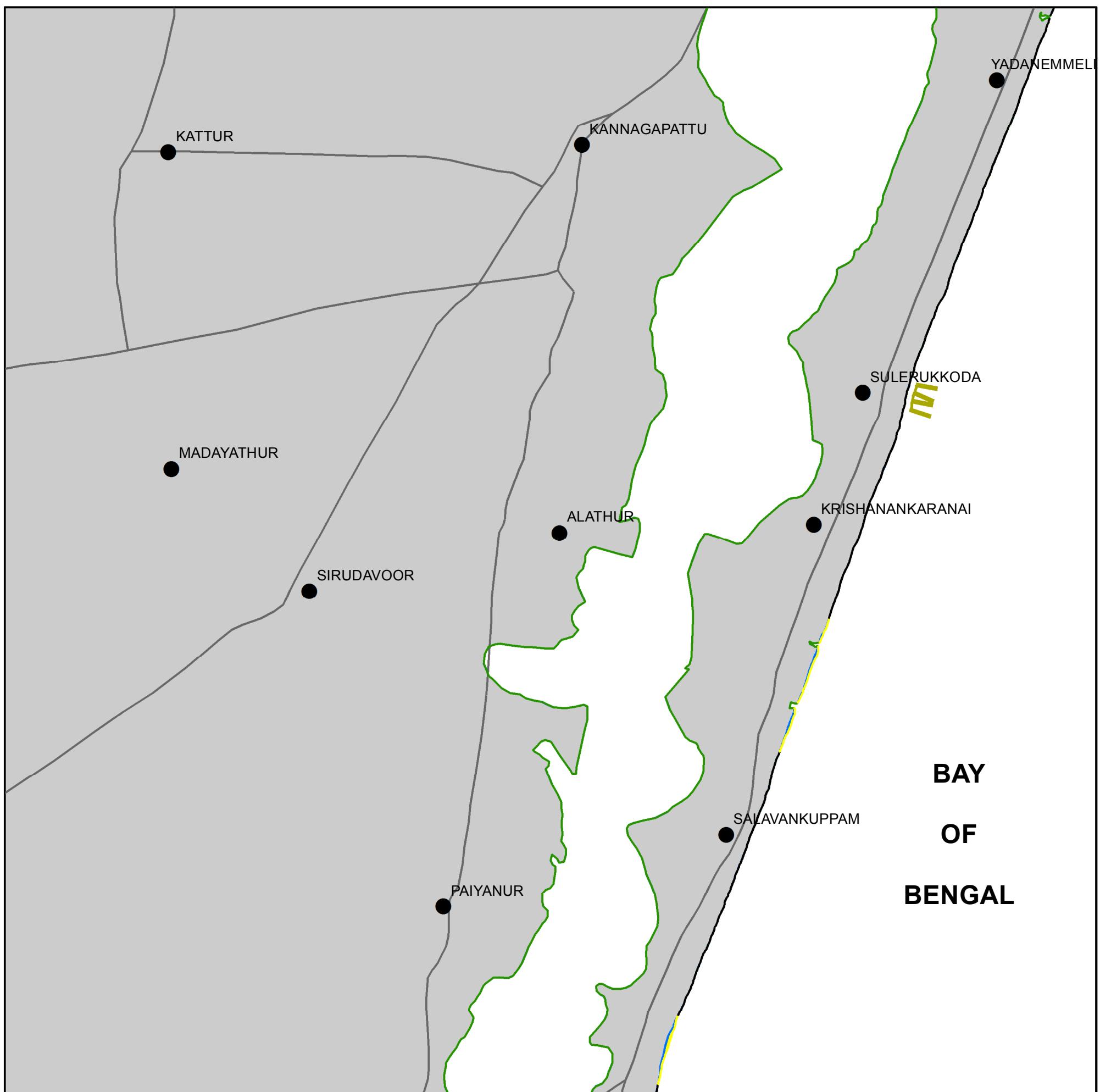
# SHORELINE CHANGE MAP

KANCHEEPURAM DISTRICT

TAMILNADU

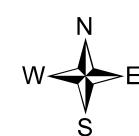
FOR OFFICIAL USE ONLY

SHEET NO. 66D02NE



## Legend

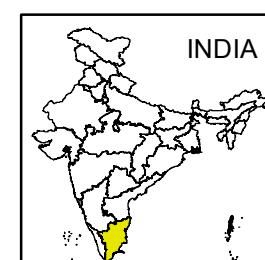
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- GROYNES
- HABITATION



0 2 km

## INDEX TO SHEETS

66D01SW	66D01SE	66D05SW
66D02NW	66D02NE	66D06NW
66D02SW	66D02SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

KANCHEEPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D01SE



## Legend

- EROSION
- ACCRETION
- ROAD
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

66D01NW	66D01NE	66D05NW
66D01SW	66D01SE	66D05SW
66D02NW	66D02NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



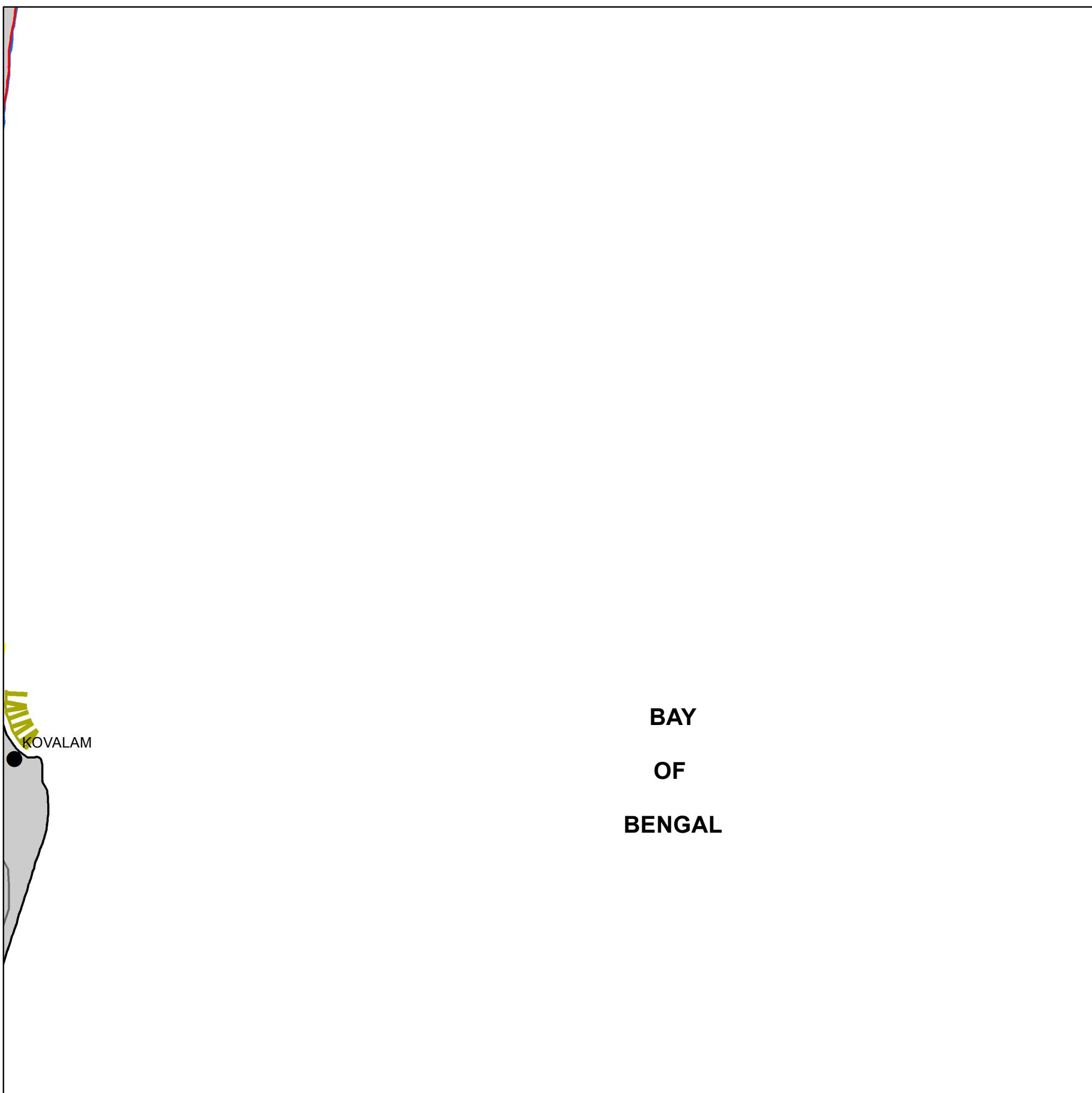
# SHORELINE CHANGE MAP

KANCHEEPURAM DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D05SW



## Legend

- █ EROSION
- █ ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- GROYNES
- HABITATION



0 2 km

## INDEX TO SHEETS

66D01NE	66D05NW	SEA
66D01SE	66D05SW	SEA
66D02NE	66D06NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



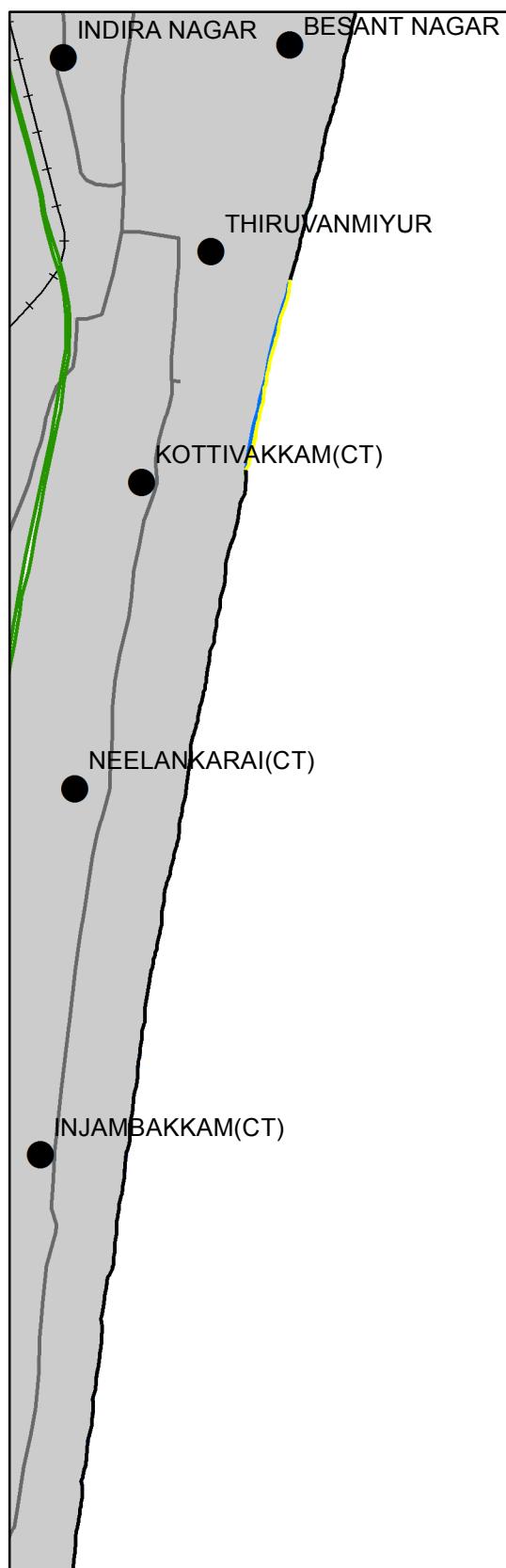
# SHORELINE CHANGE MAP

KANCHEEPURAM  
CHENNAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66D05NW



BAY  
OF  
BENGAL

## Legend

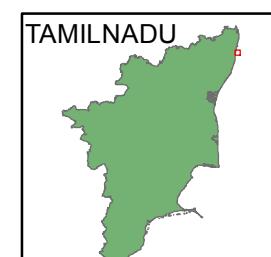
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

66C04SE	66C08SW	SEA
66D01NE	66D05NW	SEA
66D01SE	66D05SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

CHENNAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66C08SW



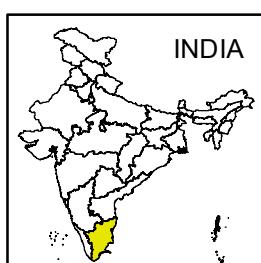
## Legend

- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +—+ RAILWAY
- SEA WALL
- |— BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

66C04NE	66C08NW	SEA
66C04SE	66C08SW	SEA
66D01NE	66D05NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

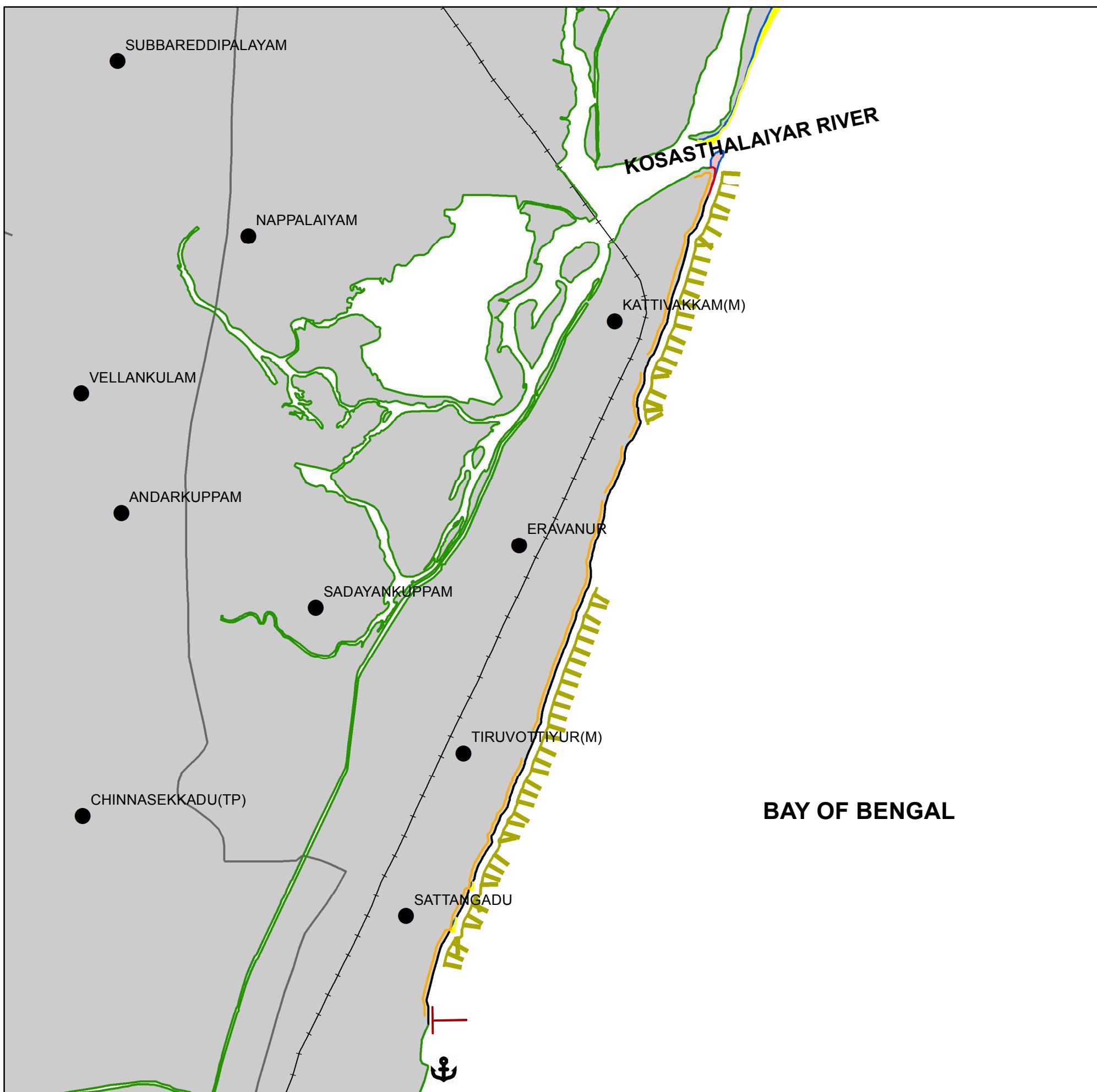


# SHORELINE CHANGE MAP

THIRUVALLUR &  
CHENNAI DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY  
SHEET NO. 66C08NW



## Legend

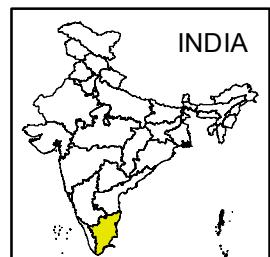
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +— RAILWAY
- SEA WALL
- ||||| GROYNES
- T— BREAKWATER
- anchor— PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

66C03SE	66C07SW	SEA
66C04NE	66C08NW	SEA
66C04SE	66C08SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



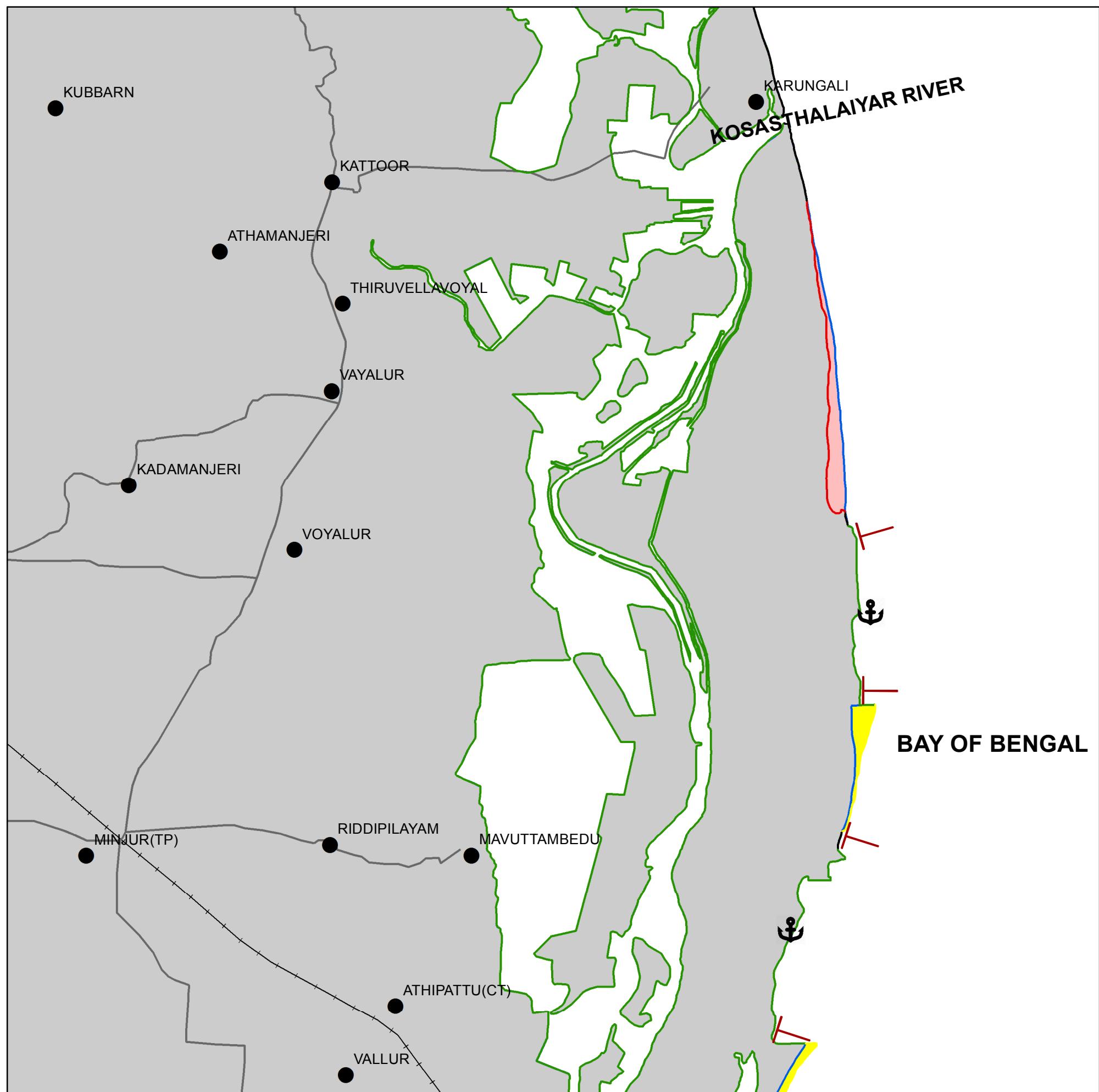
# SHORELINE CHANGE MAP

THIRUVALLUR DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66C07SW



## Legend

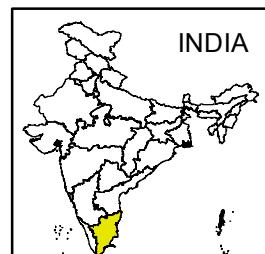
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +— RAILWAY
- |— BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

66C03NE	66C07NW	SEA
66C03SE	66C07SW	SEA
66C04NE	66C08NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



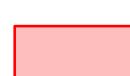
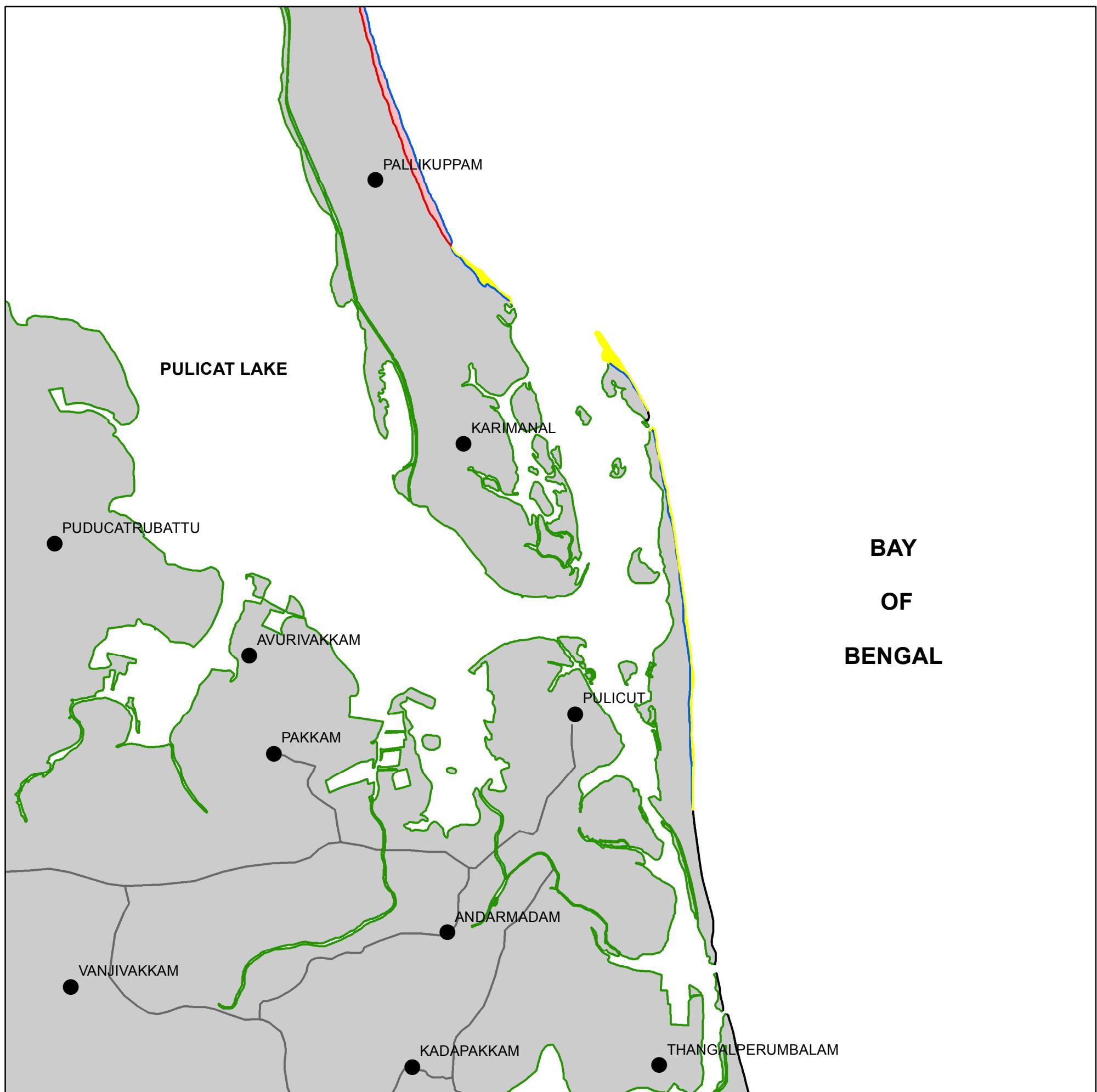
# SHORELINE CHANGE MAP

THIRUVALLUR DISTRICT

TAMILNADU

FOR OFFICIAL USE ONLY

SHEET NO. 66C07NW



EROSION



ACCRETION



HIGH-TIDE LINE 2014-16



HIGH-TIDE LINE 2004-06



STABLE  
ROAD



ROAD  
HABITATION

## Legend

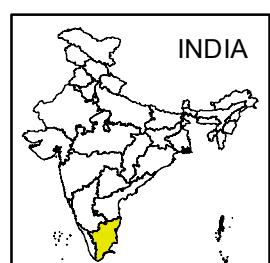


0

2 km

## INDEX TO SHEETS

66C02SE	66C06SW	SEA
66C03NE	66C07NW	SEA
66C03SE	66C07SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

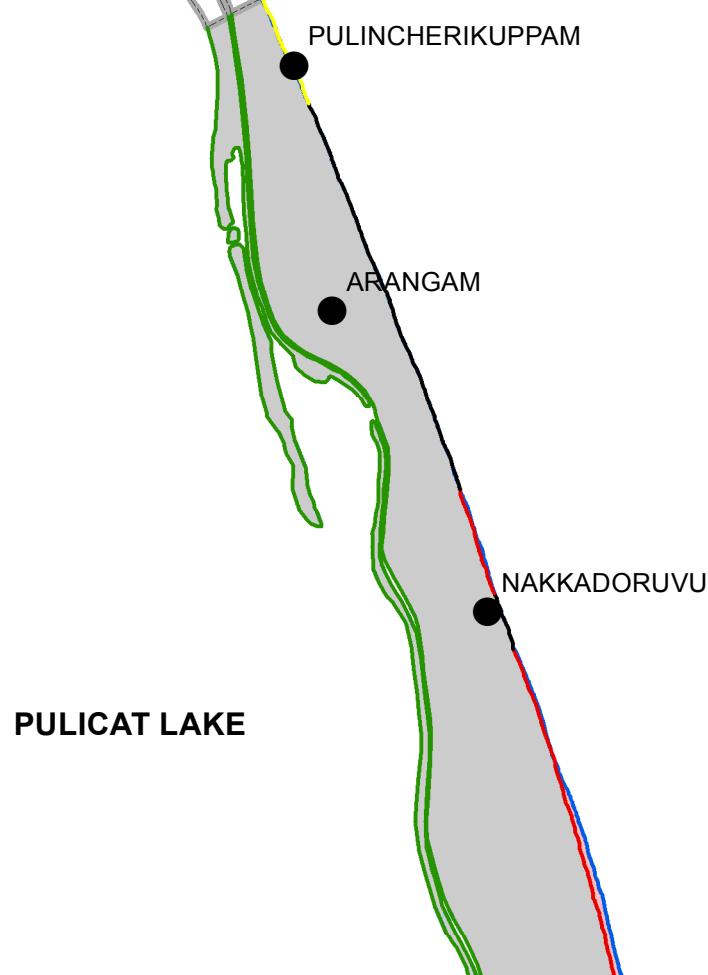
THIRUVALLUR DISTRICT

TAMILNADU

SHEET NO. 66C06SW

ANDHRA PRADESH

BAY  
OF  
BENGAL



Legend	
	EROSION
	ACCRETION
	HIGH-TIDE LINE 2014-16
	HIGH-TIDE LINE 2004-06
	STABLE
	STATE BOUNDARY
	HABITATION



0 2 km

INDEX TO SHEETS		
66C02NE	SEA	SEA
66C02SE	66C06SW	SEA
66C03NE	66C07NW	SEA



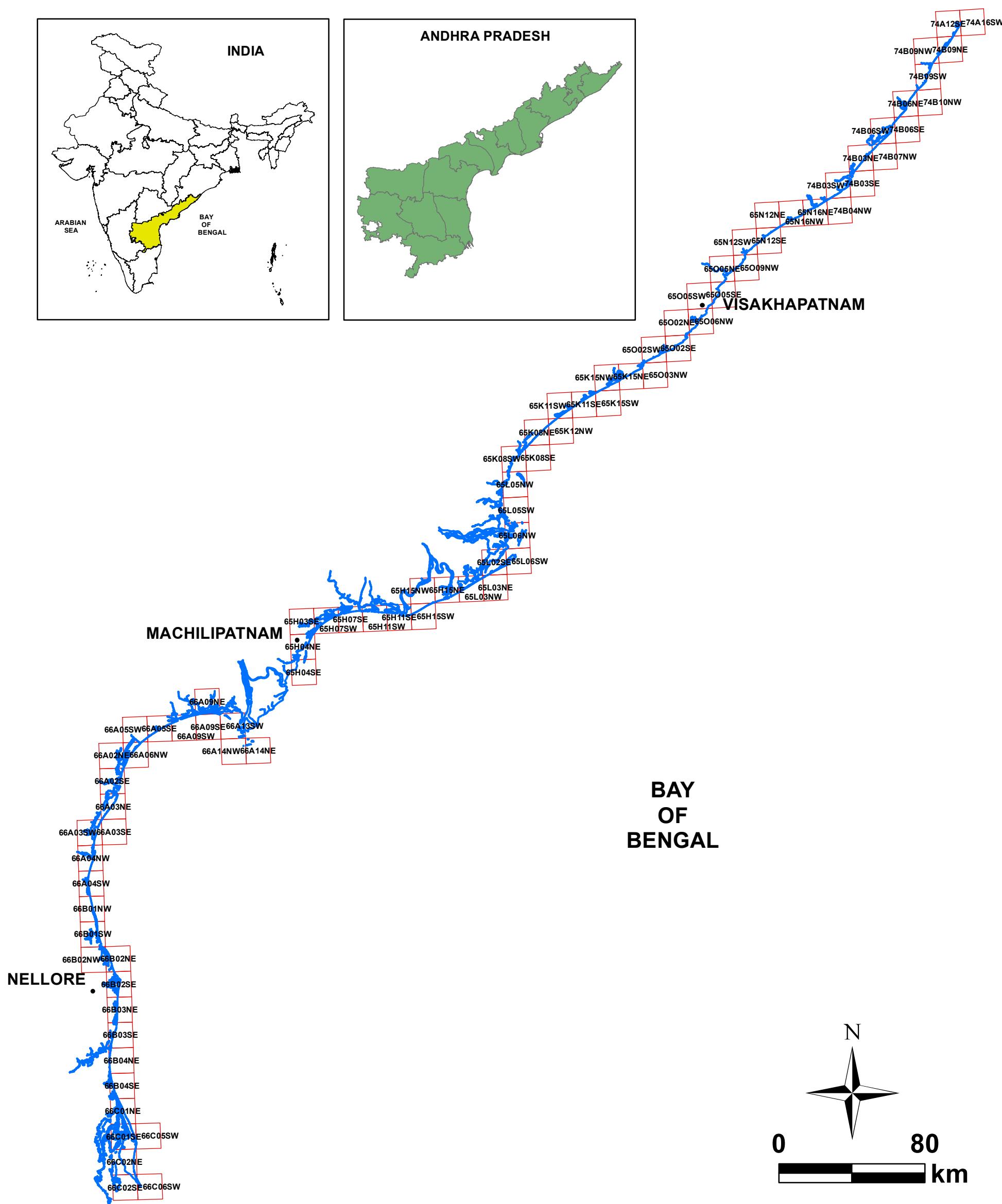
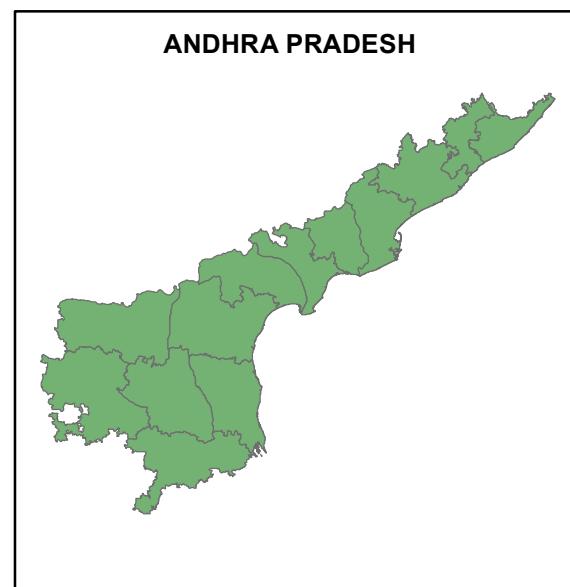
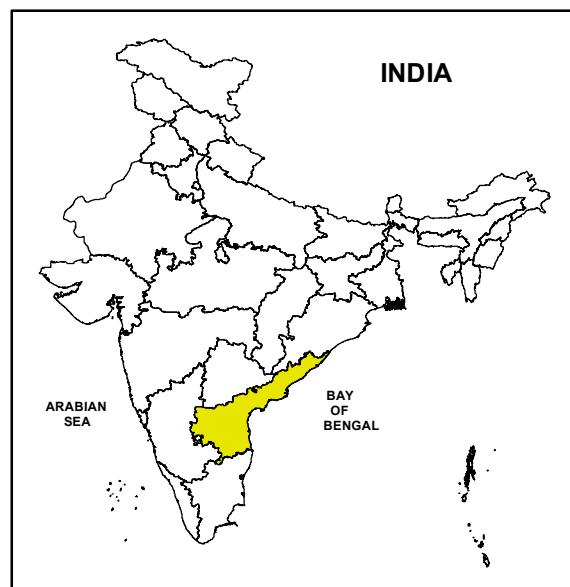
DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

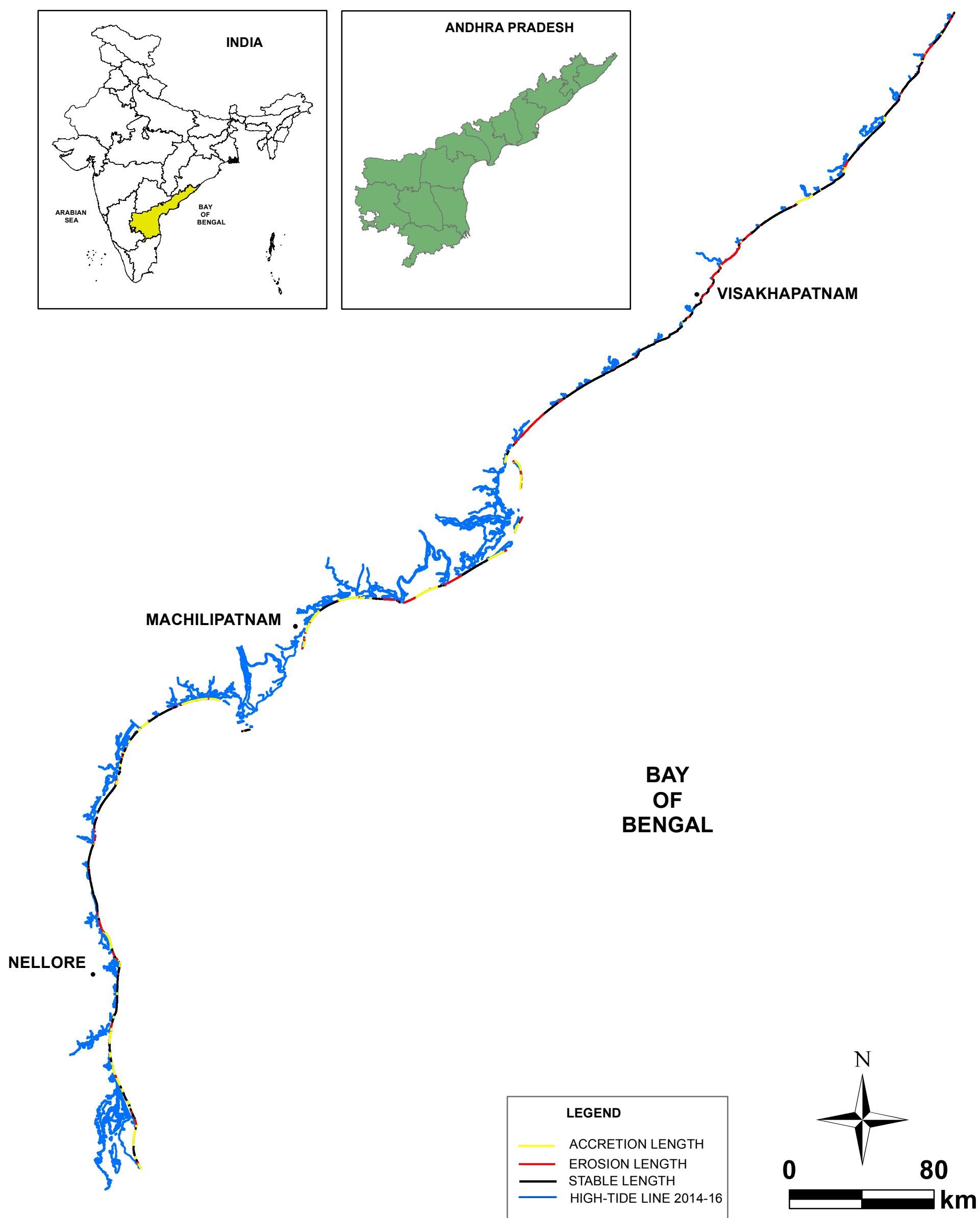
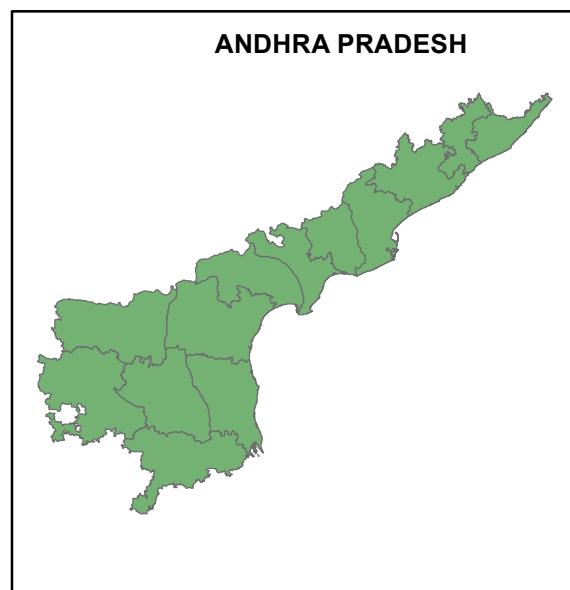
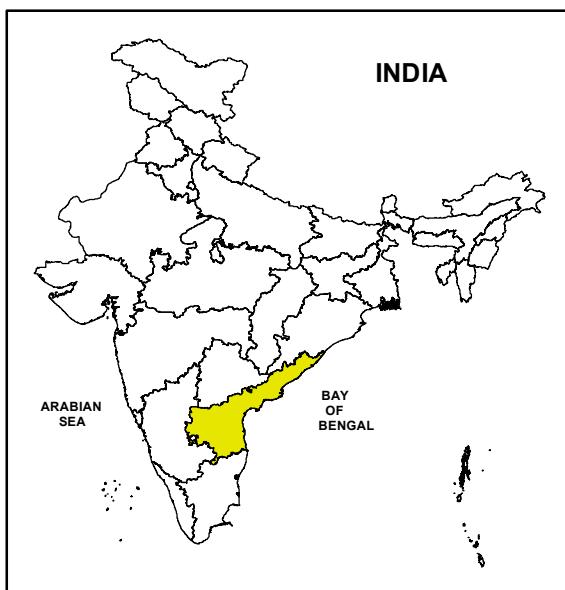


**SHORELINE CHANGE MAPS  
ANDHRA PRADESH**

# INDEX MAP OF ANDHRA PRADESH



# SHORELINE CHANGES OF ANDHRA PRADESH



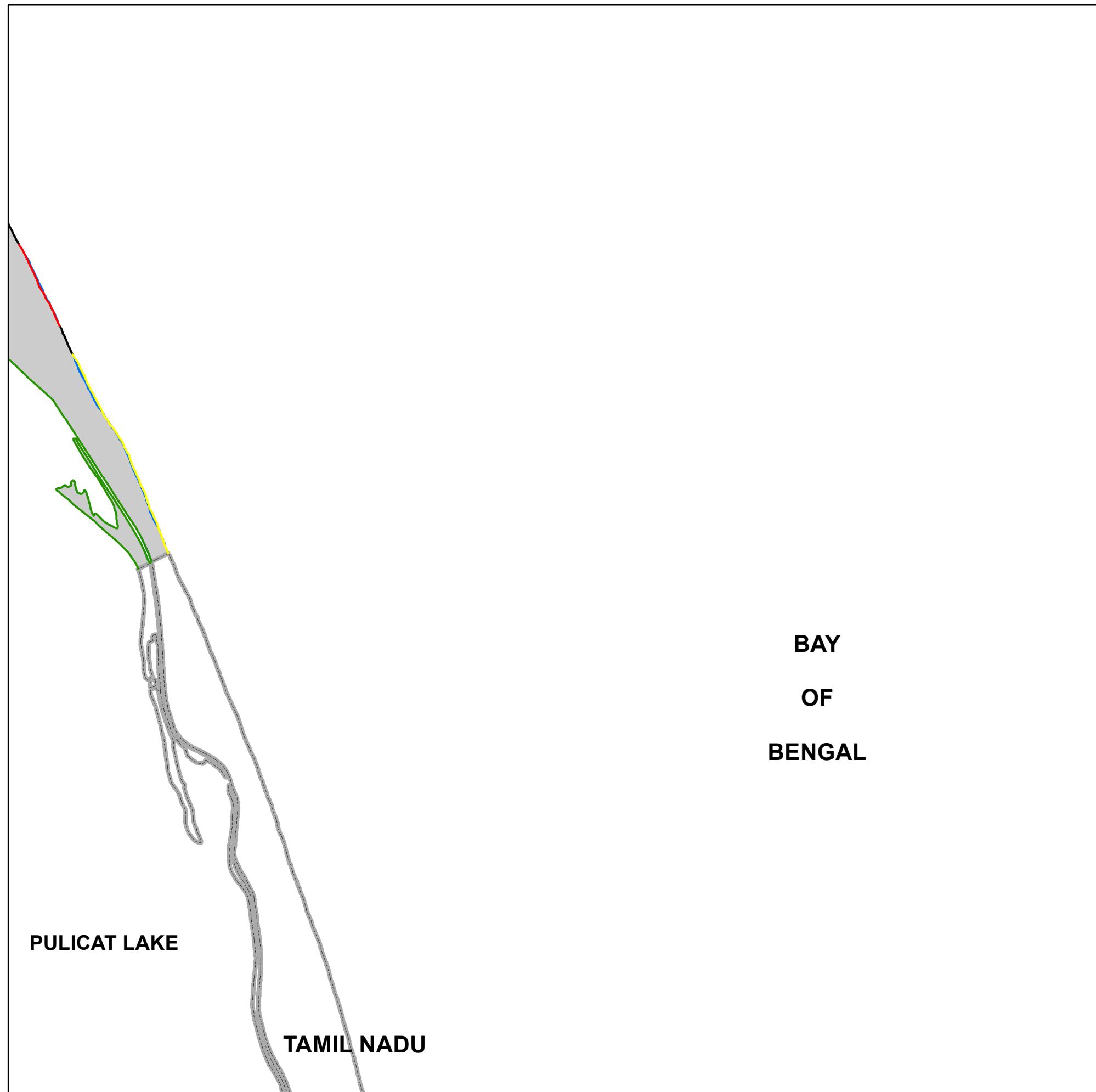
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66C06SW



## Legend

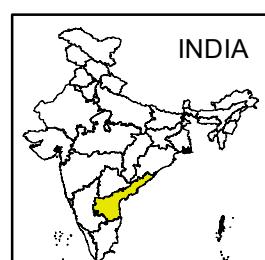
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- STATE BOUNDARY
- HABITATION



0 2 km

## INDEX TO SHEETS

66C02NE	SEA	SEA
66C02SE	66C06SW	SEA
66C03NE	66C07NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



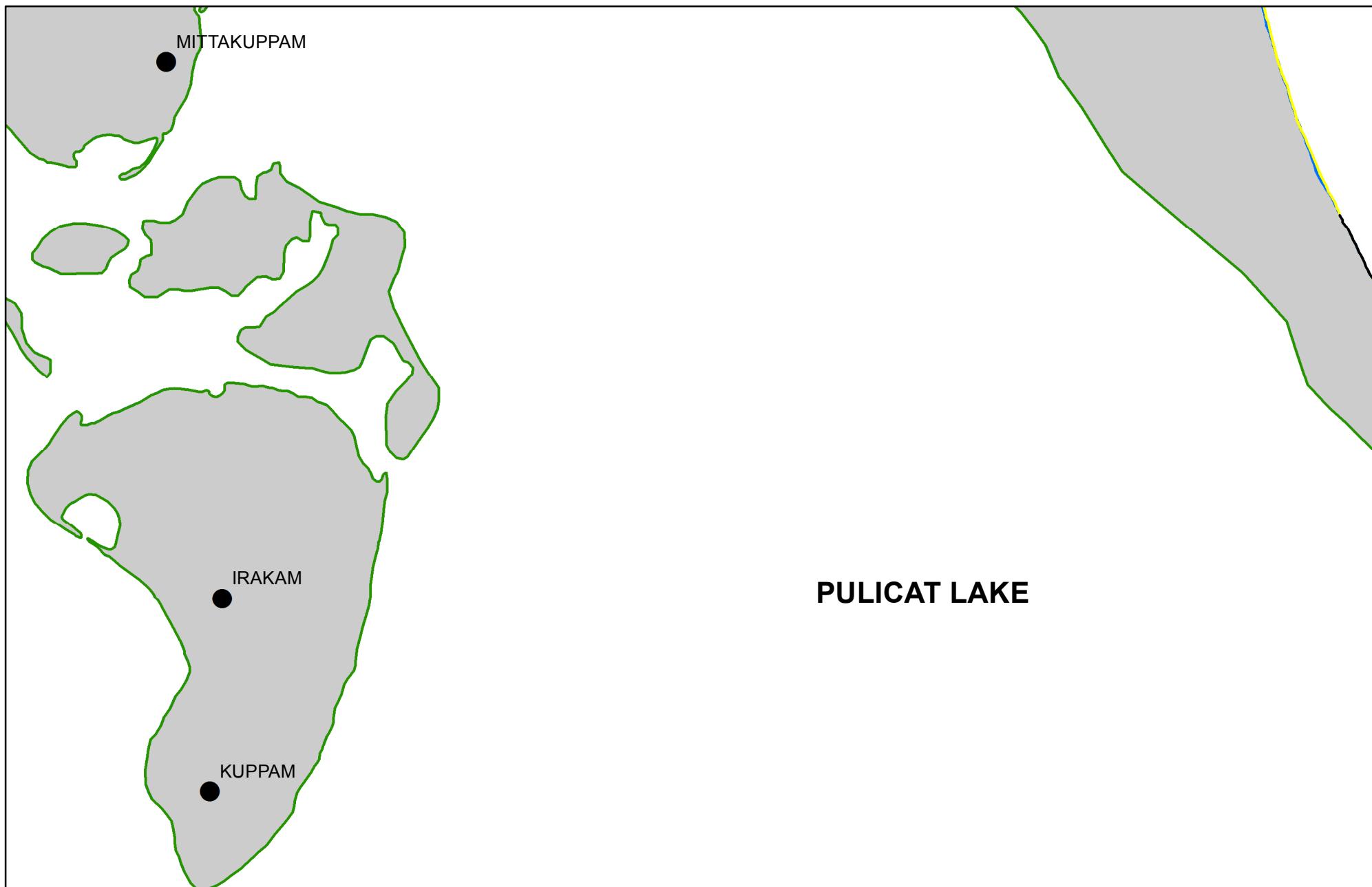
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66C02SE



## Legend

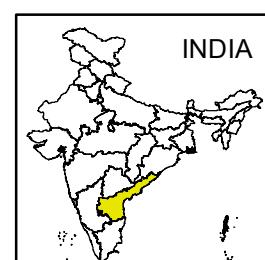
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- HABITATION



0 2 km

## INDEX TO SHEETS

66C02NW	66C02NE	SEA
66C02SW	66C02SE	66C06SW
66C03NW	66C03NE	66C07NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66C02NE



## Legend

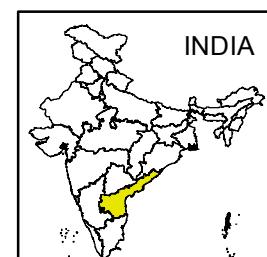
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66C01SW	66C01SE	66C05SW
66C02NW	66C02NE	SEA
66C02SW	66C02SE	66C06SW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



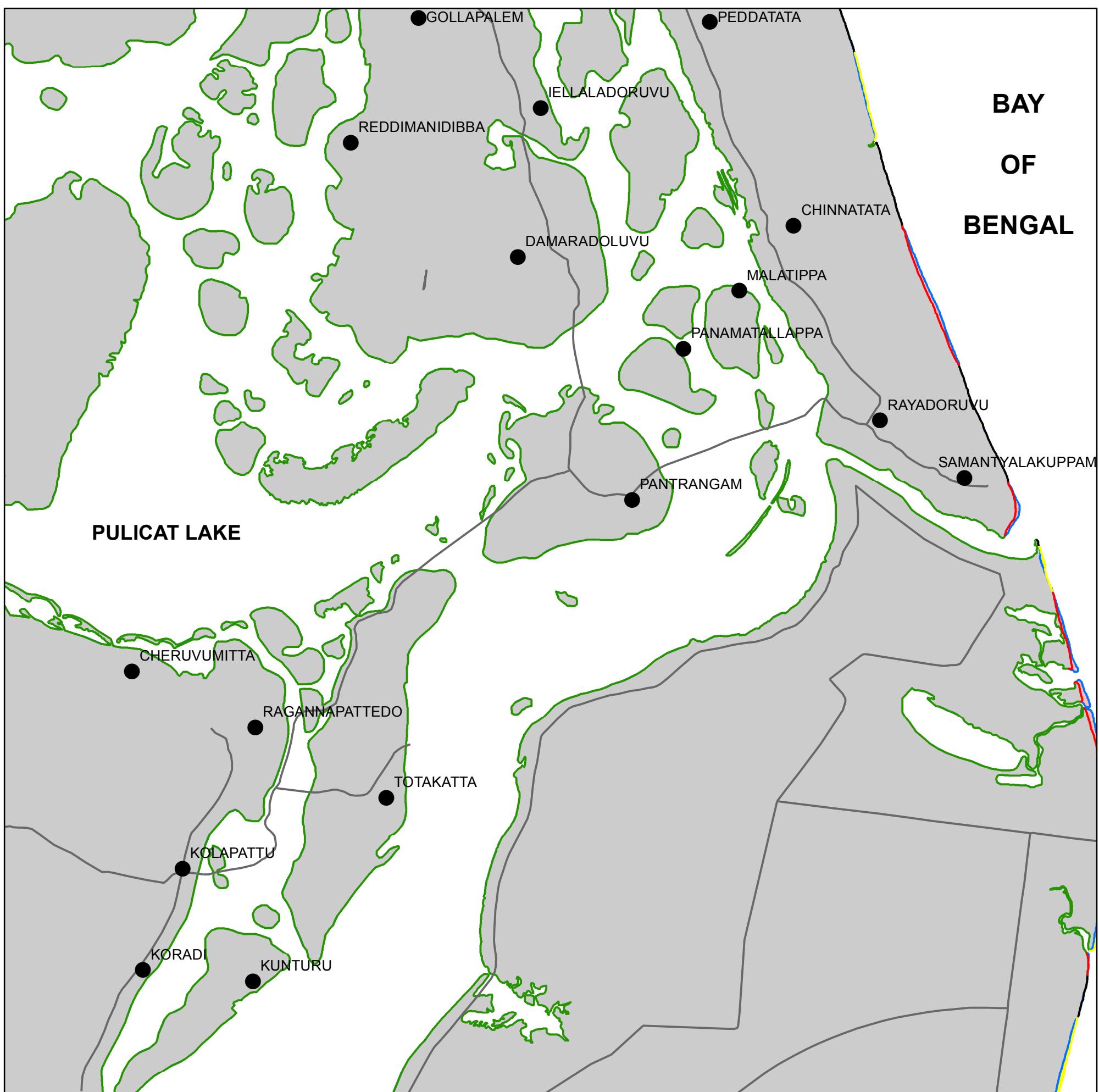
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

NELLORE DISTRICT

ANDHRA PRADESH

SHEET NO. 66C01SE



## Legend

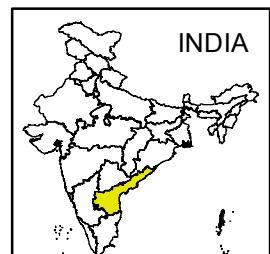
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66C01NW	66C01NE	SEA
66C01SW	66C01SE	66C05SW
66C02NW	66C02NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66C05SW

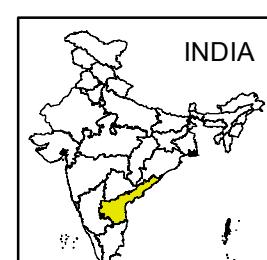
BAY  
OF  
BENGAL

## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06



0 2 km



## INDEX TO SHEETS

66C01NE	SEA	SEA
66C01SE	66C05SW	SEA
66C02NE	SEA	SEA

DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



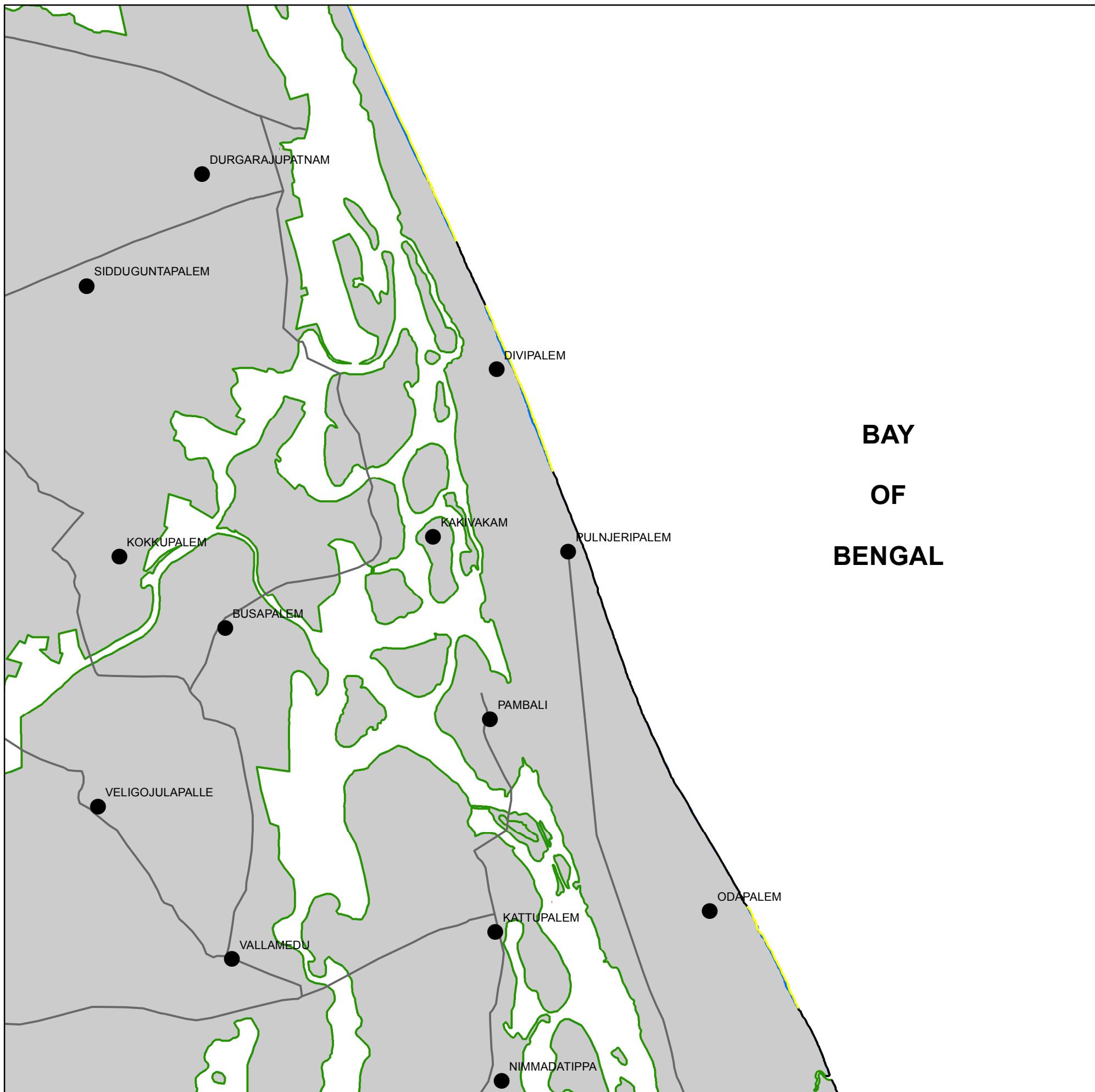
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66C01NE



## Legend

- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66B04SW	66B04SE	SEA
66C01NW	66C01NE	SEA
66C01SW	66C01SE	66C05SW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B04SE



## Legend

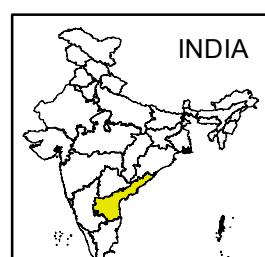
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66B04NW	66B04NE	SEA
66B04SW	66B04SE	SEA
66C01NW	66C01NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



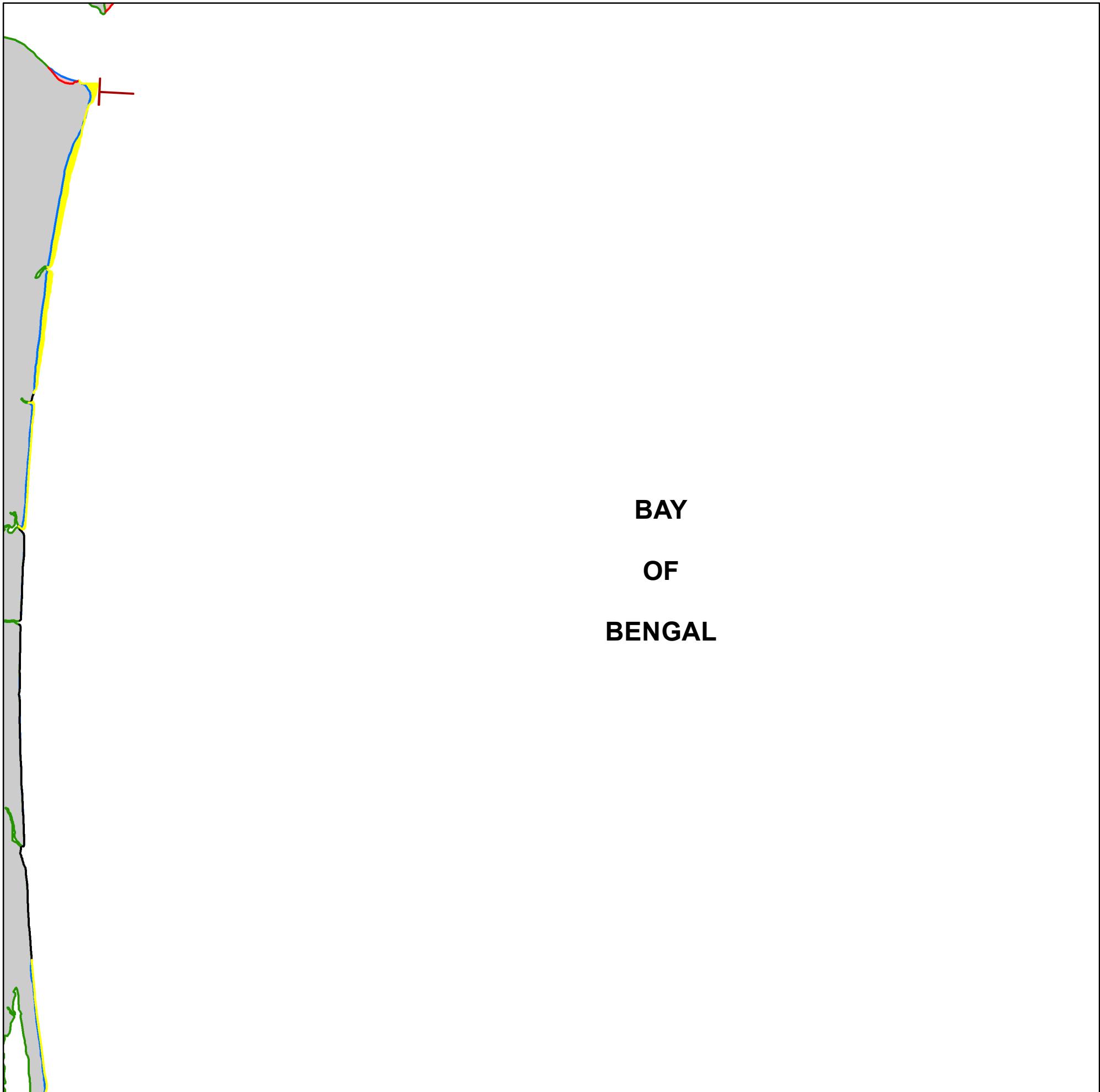
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B04NE



## Legend

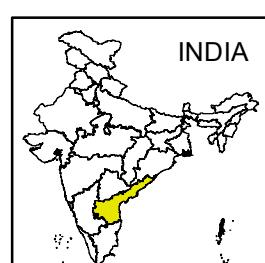
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- BREAKWATER



0 2 km

## INDEX TO SHEETS

66B03SW	66B03SE	SEA
66B04NW	66B04NE	SEA
66B04SW	66B04SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



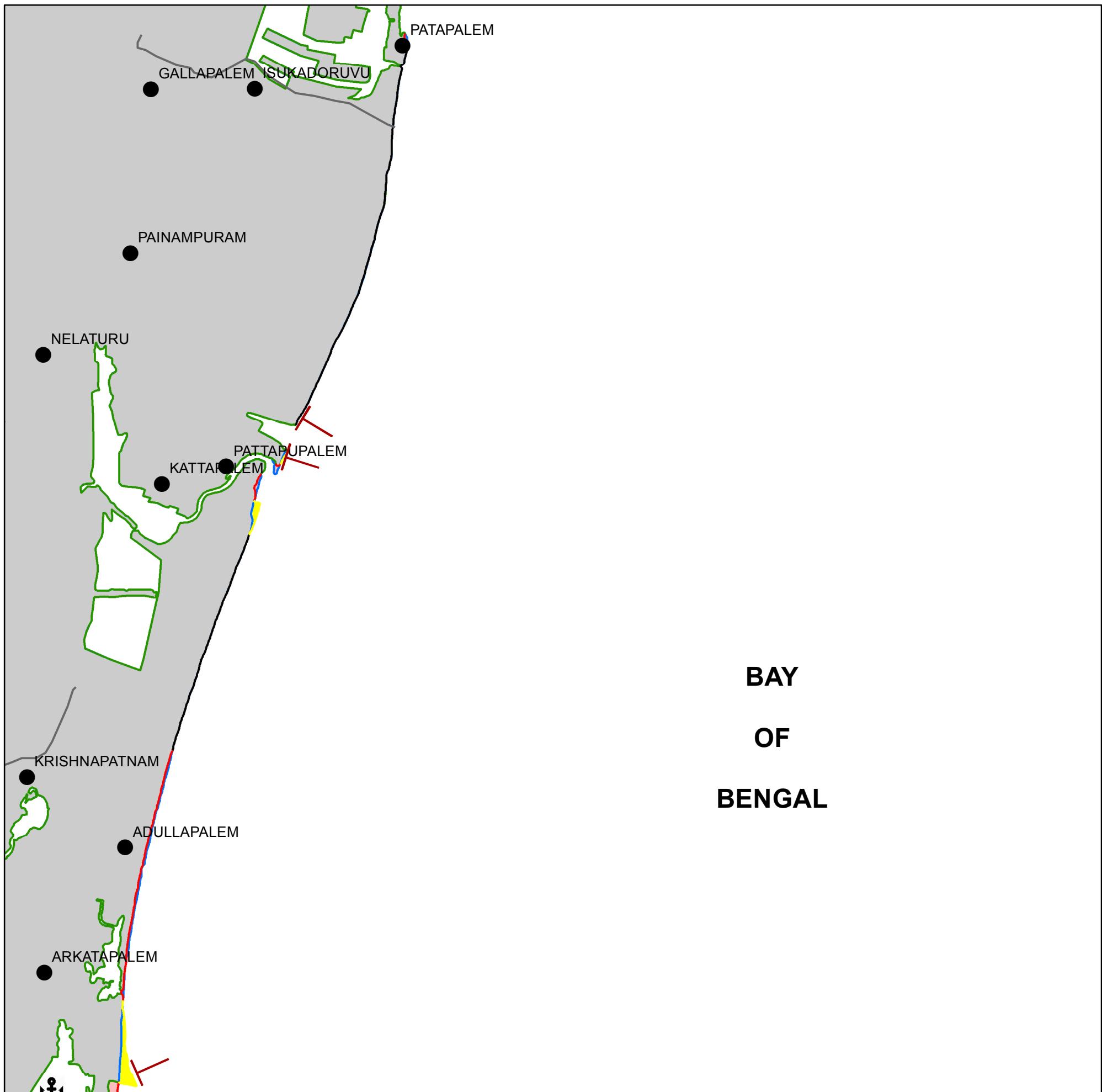
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B03SE



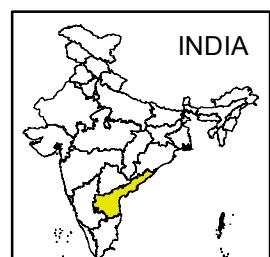
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

INDEX TO SHEETS		
66B03NW	66B03NE	SEA
66B03SW	66B03SE	SEA
66B04NW	66B04NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



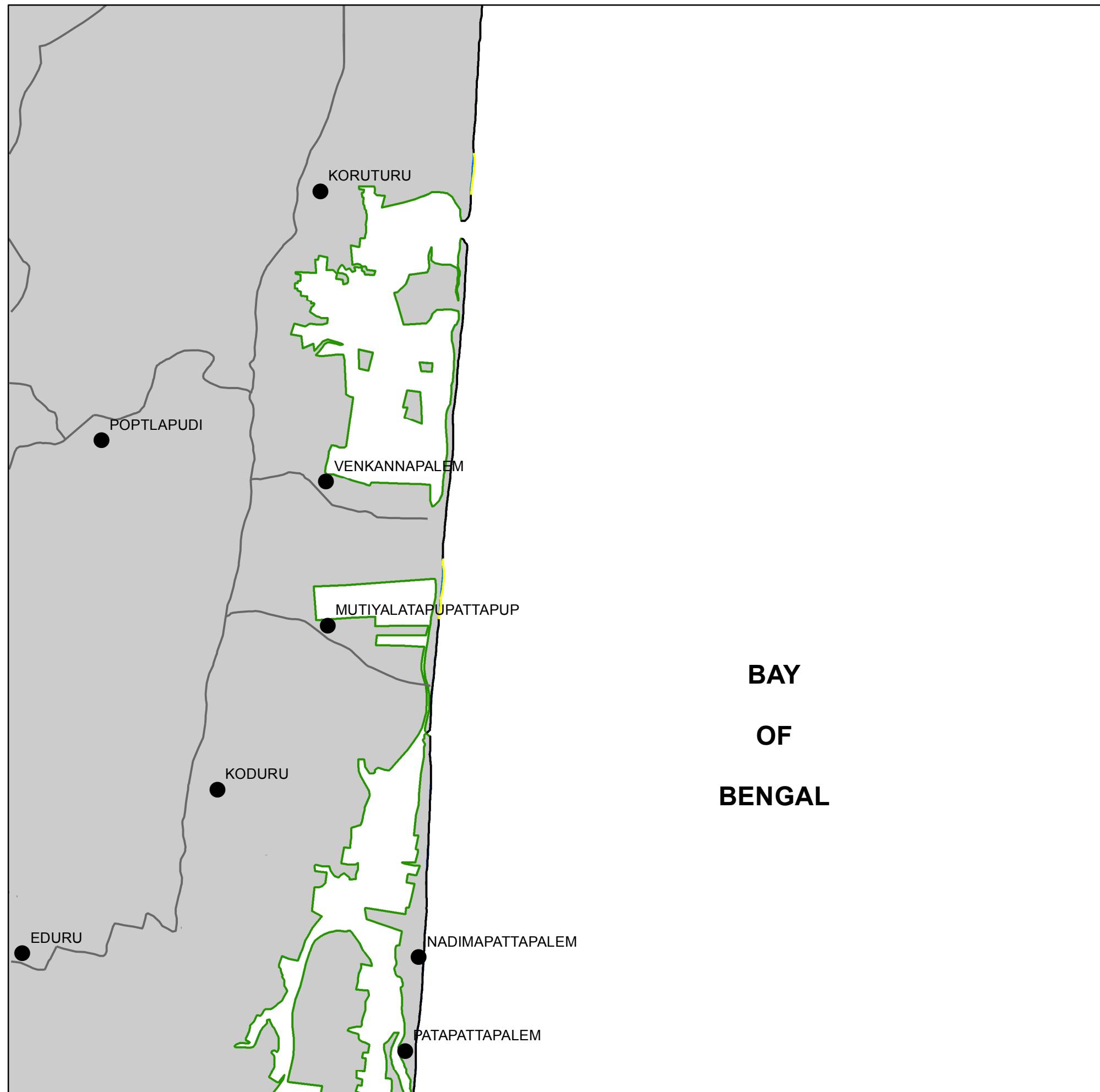
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B03NE



## Legend

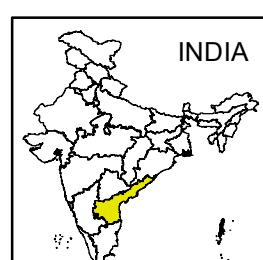
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66B02SW	66B02SE	SEA
66B03NW	66B03NE	SEA
66B03SW	66B03SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



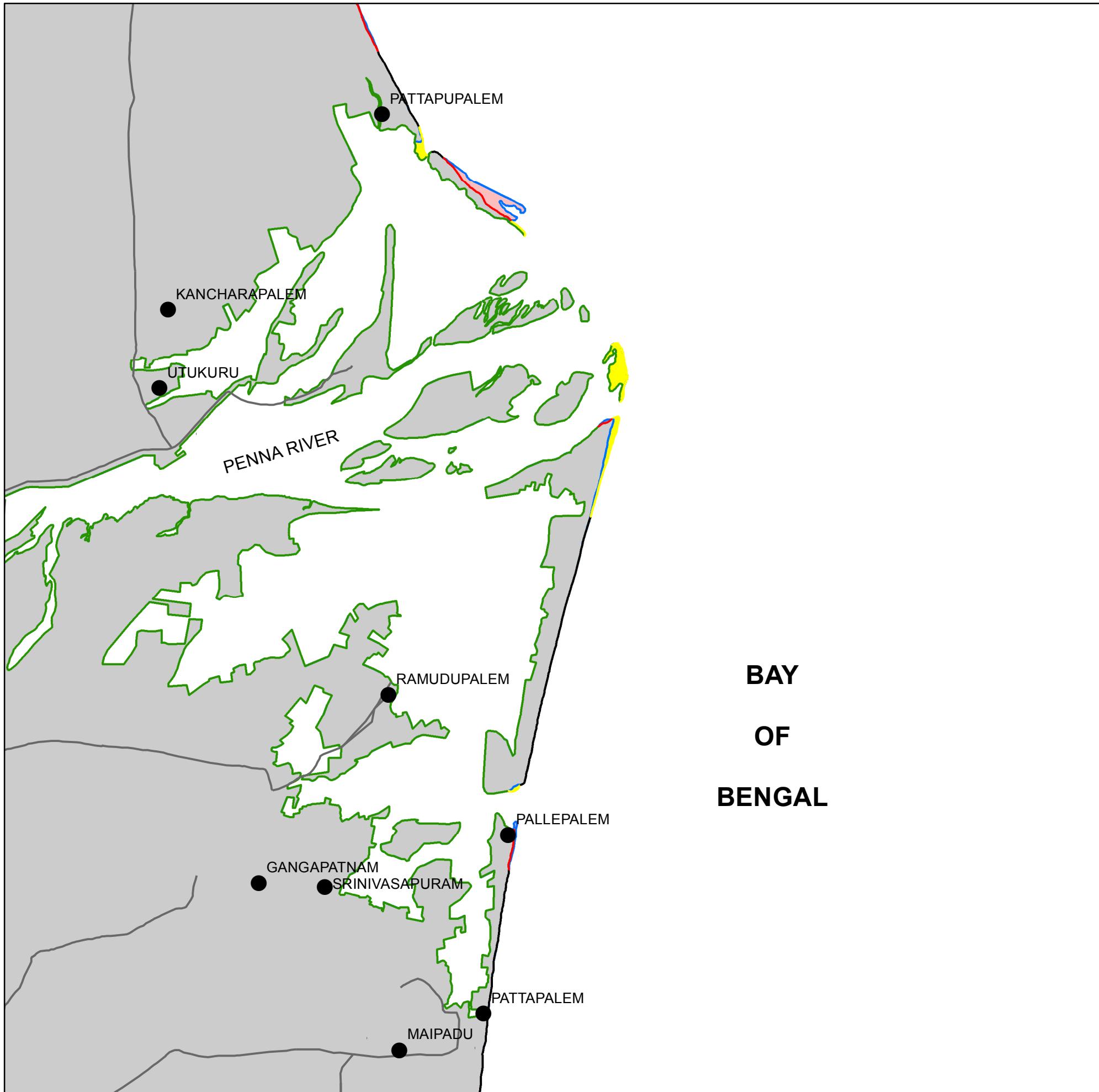
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B02SE



## Legend

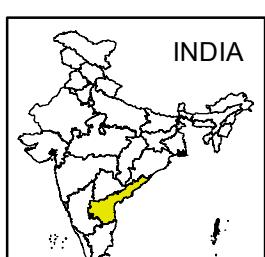
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66B02NW	66B02NE	SEA
66B02SW	66B02SE	SEA
66B03NW	66B03NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



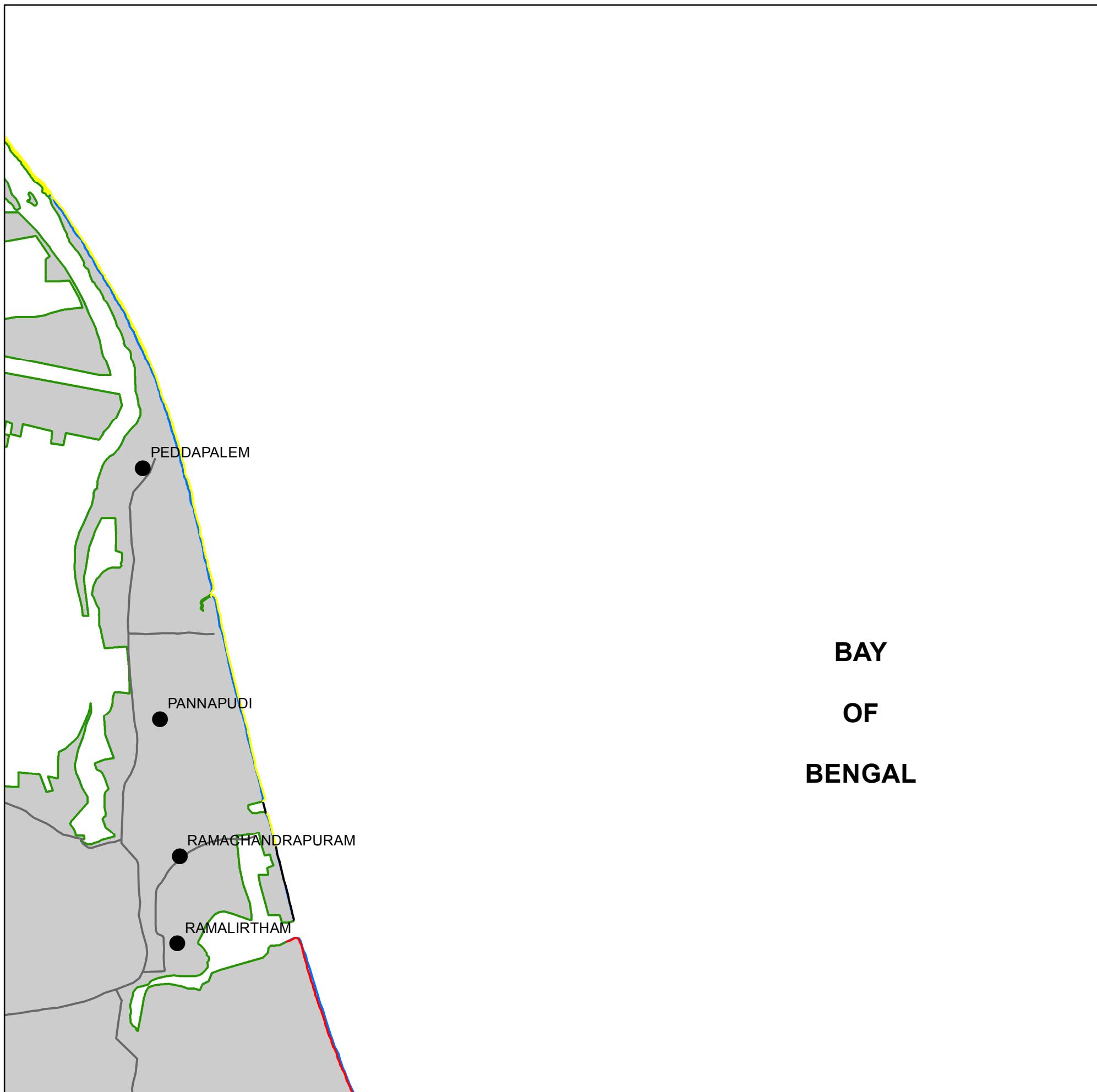
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B02NE



## Legend

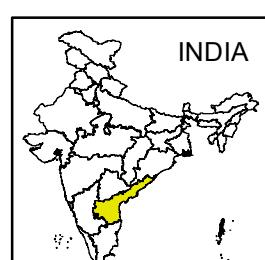
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66B01SW	SEA	SEA
66B02NW	66B02NE	SEA
66B02SW	66B02SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



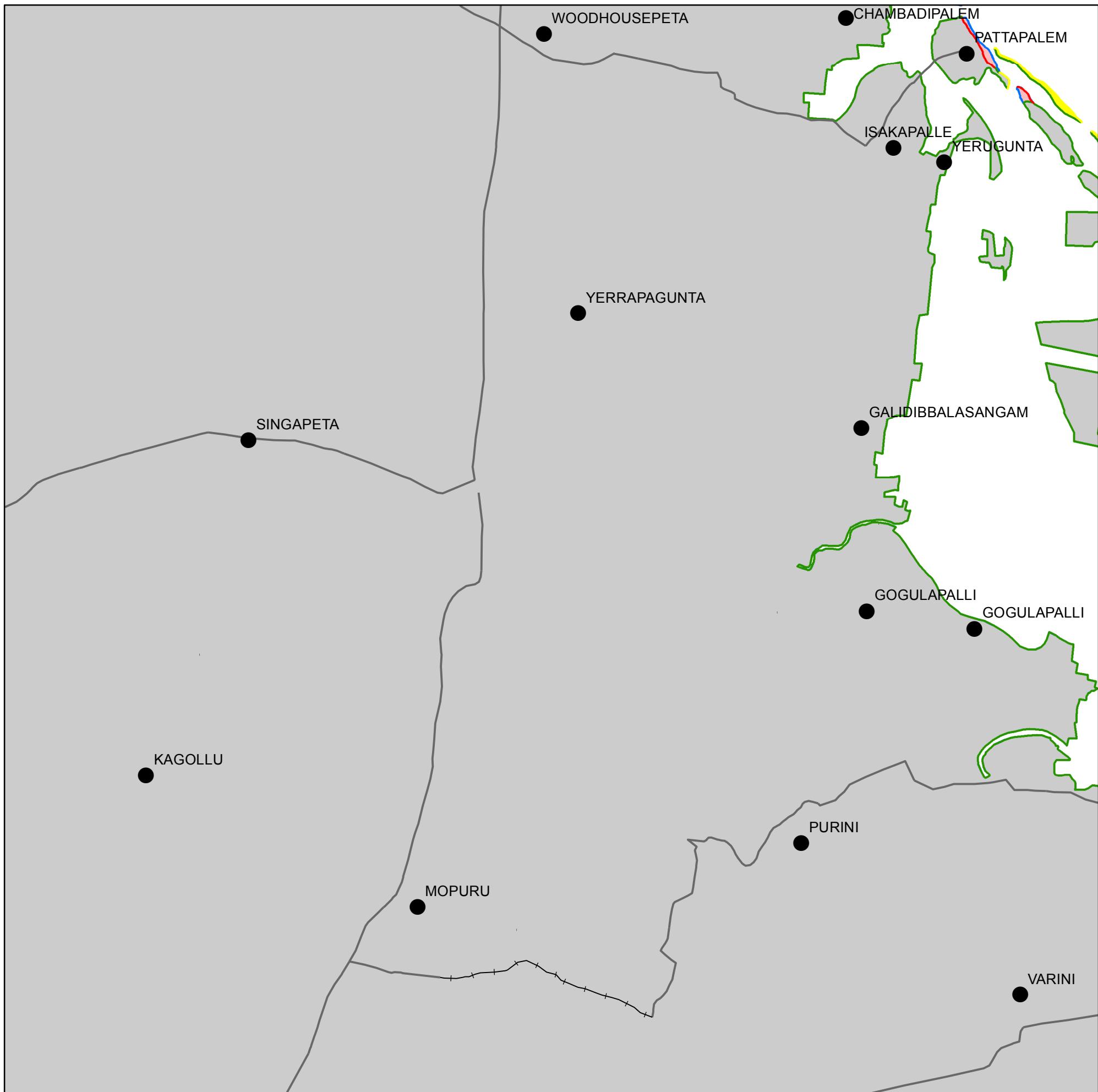
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B02NW



## Legend

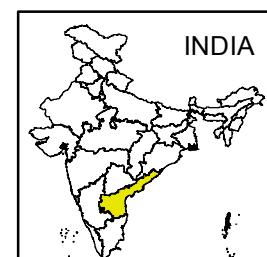
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

57N13SE	66B01SW	SEA
57N14NE	66B02NW	66B02NE
57N14SE	66B02SW	66B02SE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



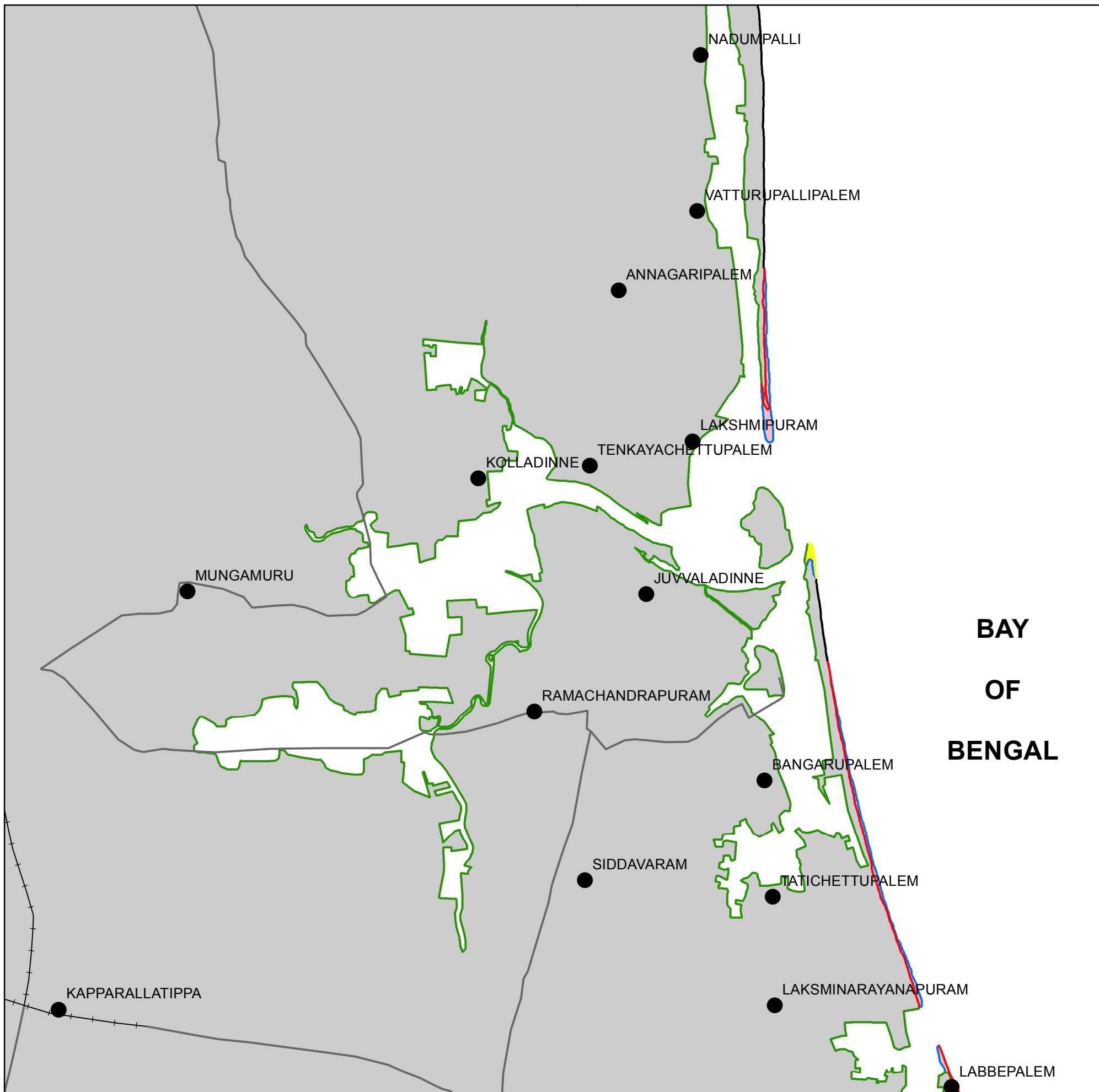
# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B01SW



## Legend

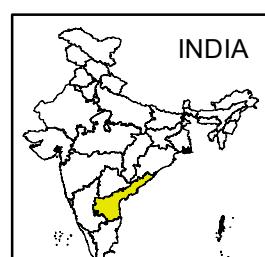
- EROSION (Red)
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- STABLE (Black line)
- ROAD (Grey line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

57N13NE	66B01NW	SEA
57N13SE	66B01SW	SEA
57N14NE	66B02NW	66B02NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

NELLORE DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66B01NW



## Legend

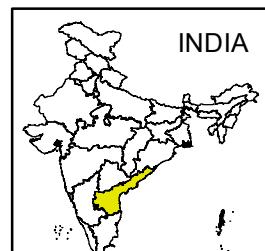
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

57M16SE	66A04SW	SEA
57N13NE	66B01NW	SEA
57N13SE	66B01SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



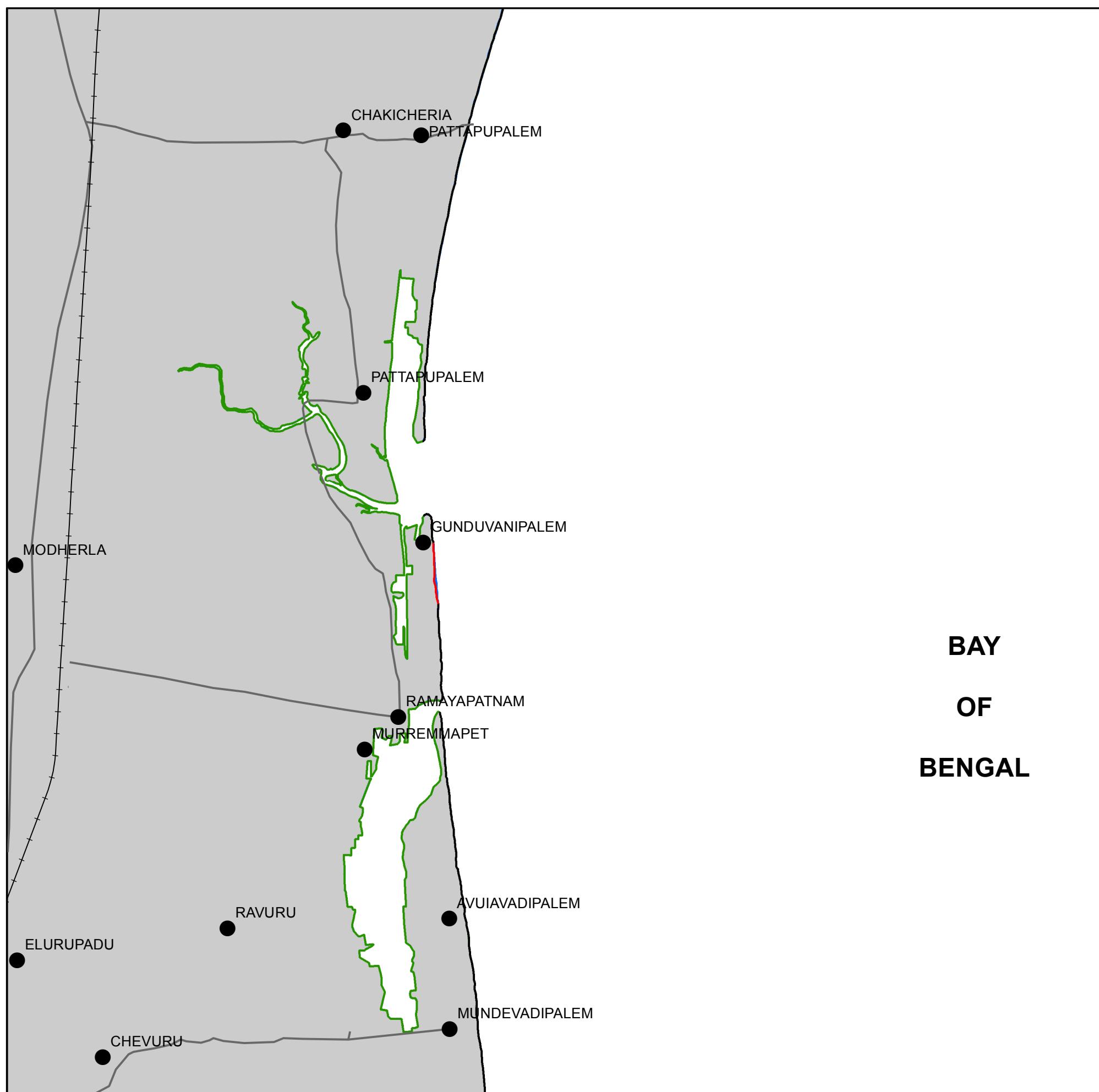
# SHORELINE CHANGE MAP

NELLORE/PRAKASAM  
DISTRICT

**ANDHRA PRADESH**

FOR OFFICIAL USE ONLY

SHEET NO. 66A04SW



## Legend

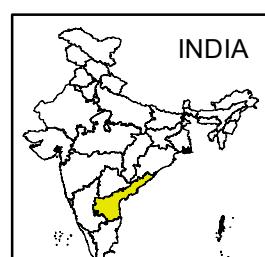
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- +— RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

57M16NE	66A04NW	SEA
57M16SE	66A04SW	SEA
57N13NE	66B01NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

PRAKASAM DISTRICT

ANDHRA PRADESH

SHEET NO. 66A04NW



## Legend

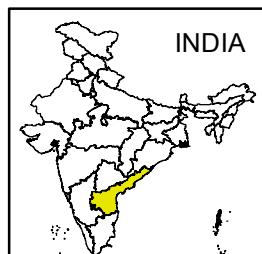
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

57M15SE	66A03SW	SEA
57M16NE	66A04NW	SEA
57M16SE	66A04SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



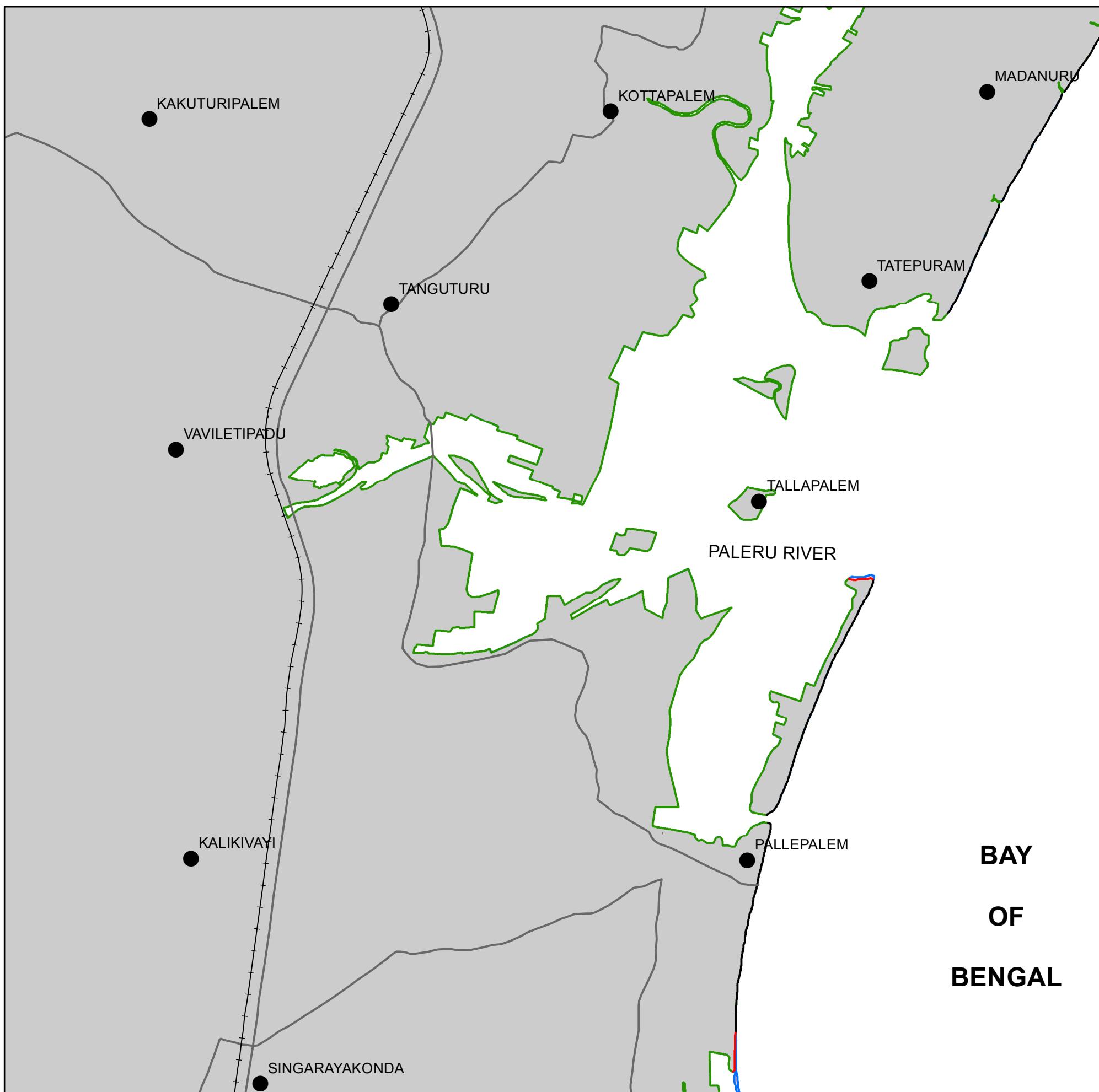
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

PRAKASAM DISTRICT

ANDHRA PRADESH

SHEET NO. 66A03SW



## Legend

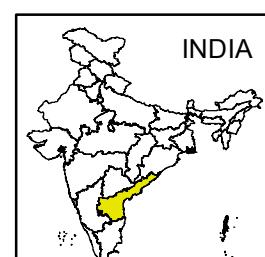
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

57M15NE	66A03NW	66A03NE
57M15SE	66A03SW	SEA
57M16NE	66A04NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



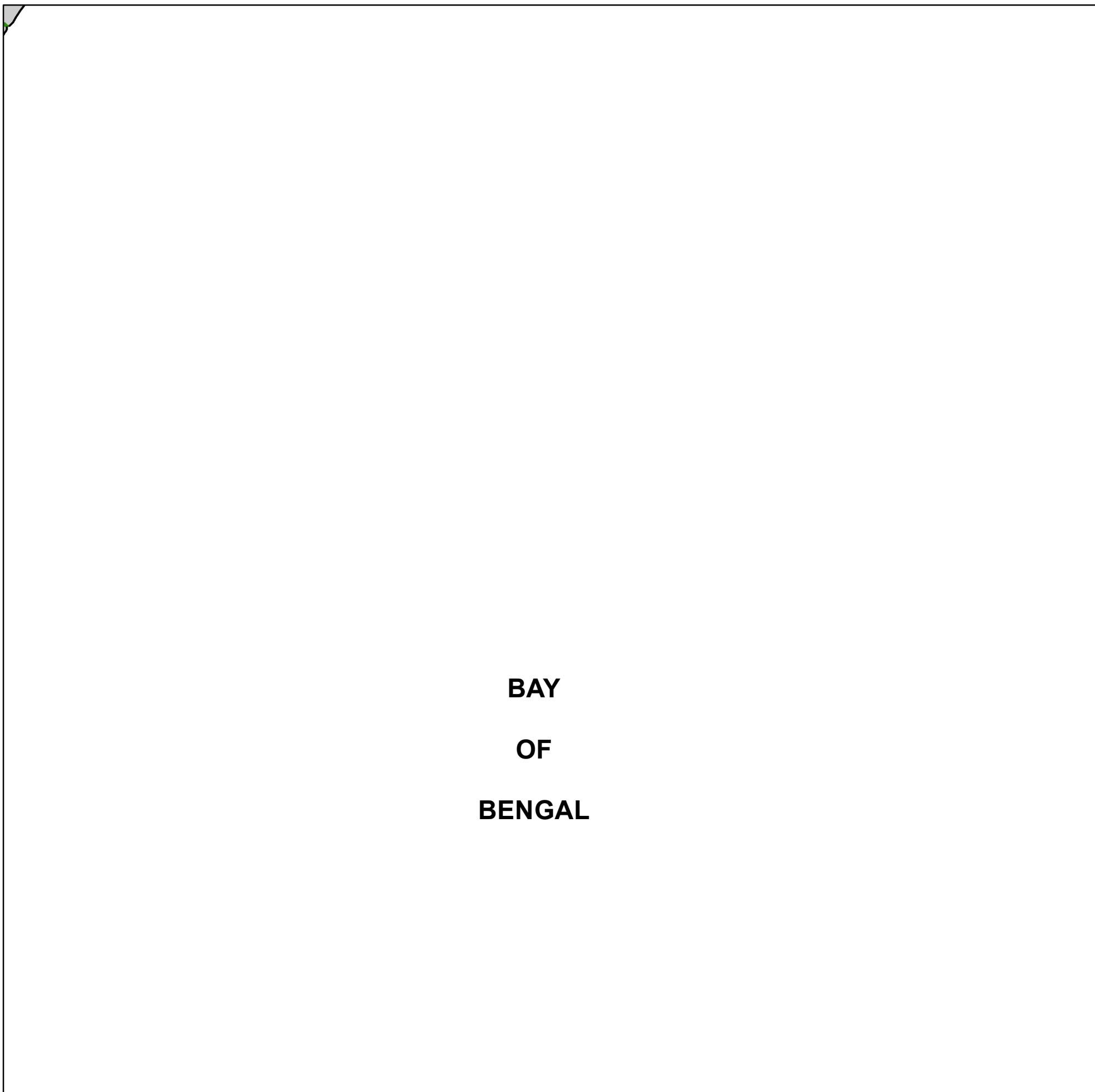
# SHORELINE CHANGE MAP

PRAKASAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A03SE



BAY  
OF  
BENGAL

## Legend

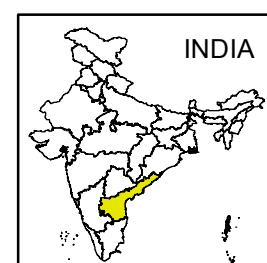
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km

## INDEX TO SHEETS

66A03NW	66A03NE	SEA
66A03SW	66A03SE	SEA
66A04NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



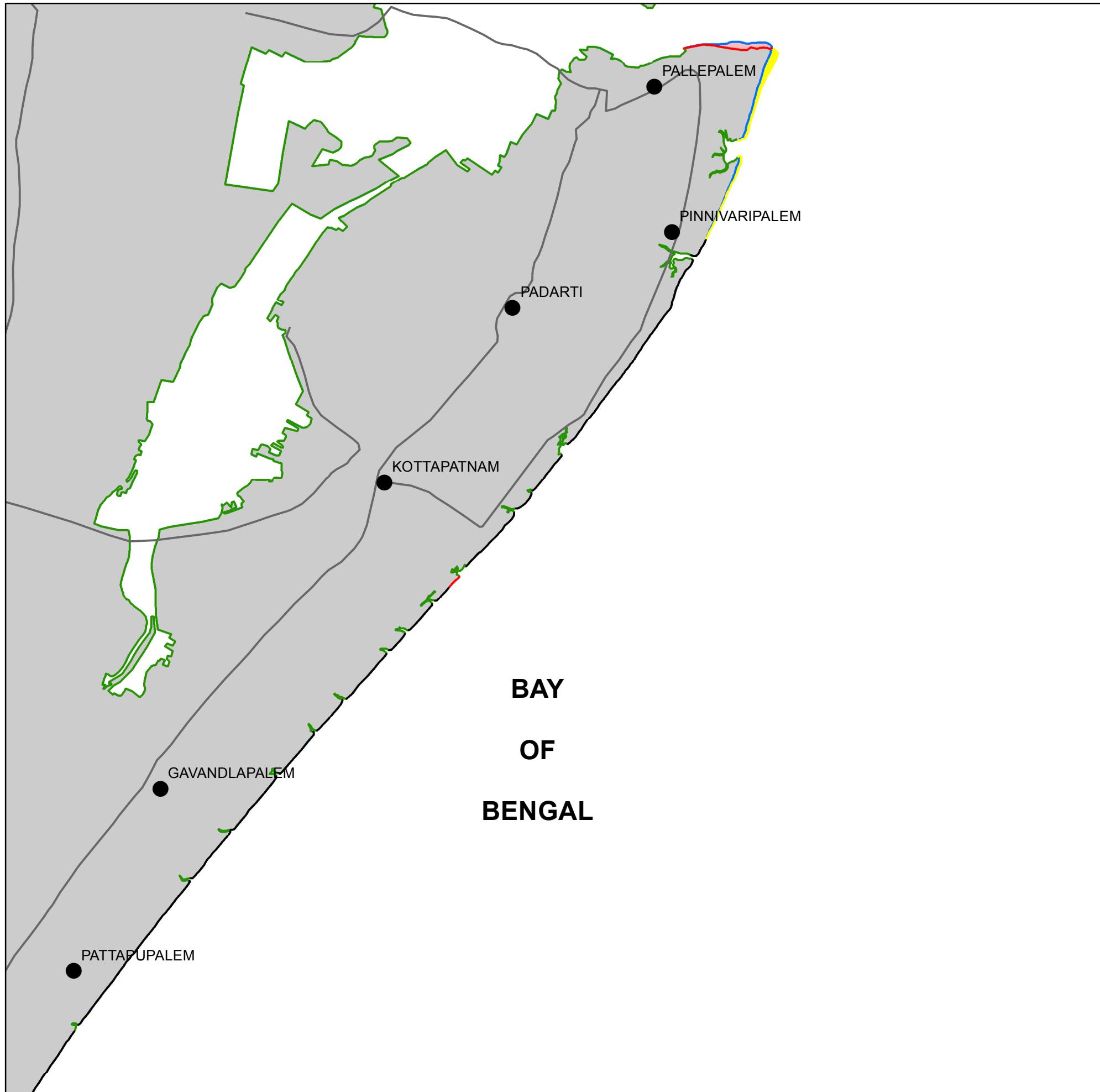
# SHORELINE CHANGE MAP

PRAKASAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A03NE



## Legend

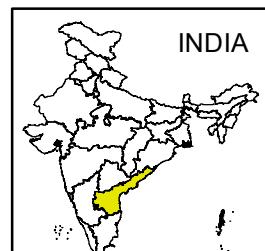
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

66A02SW	66A02SE	SEA
66A03NW	66A03NE	SEA
66A03SW	66A03SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



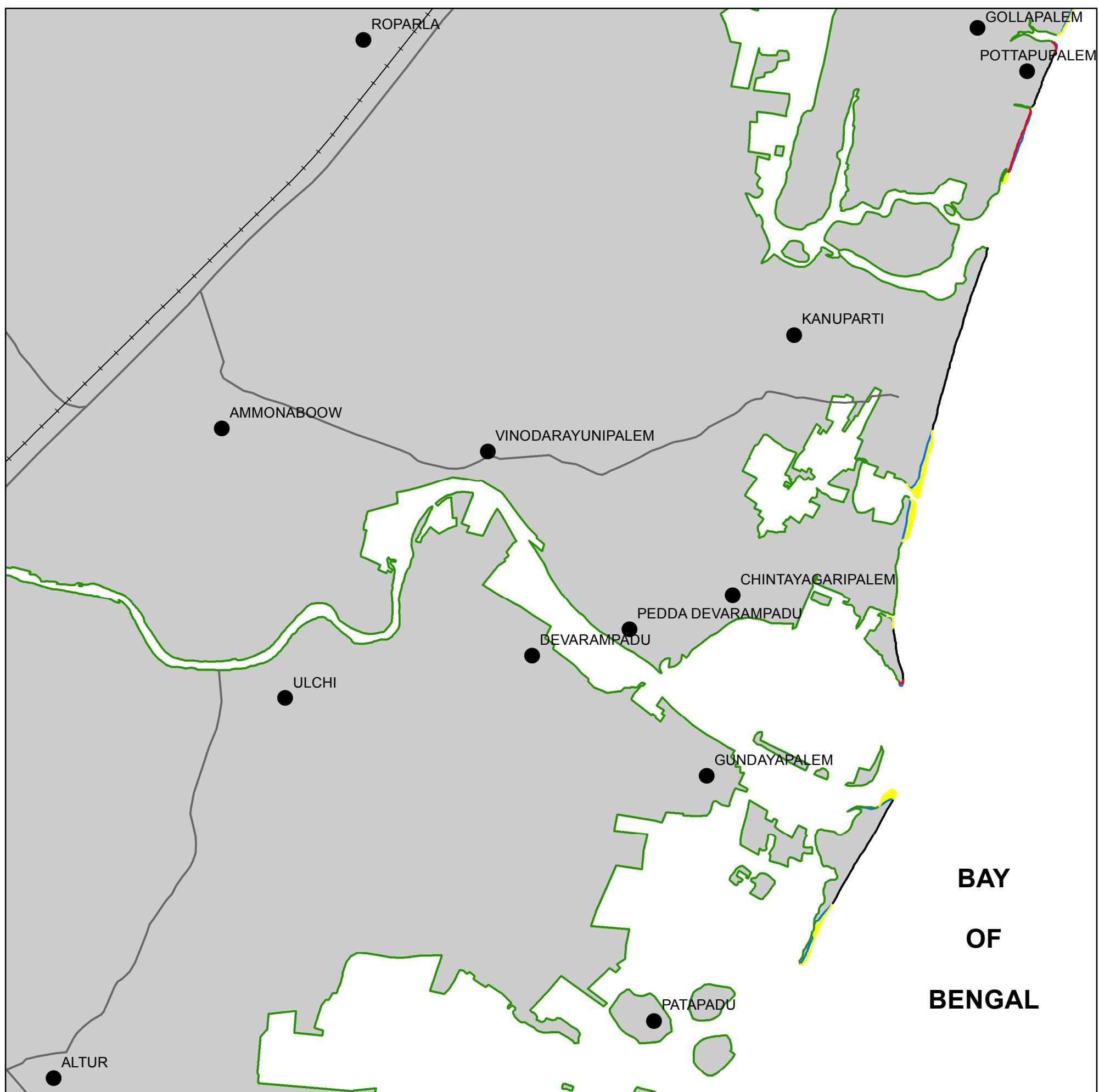
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

PRAKASAM DISTRICT

ANDHRA PRADESH

SHEET NO. 66A02SE



## Legend

- EROSION (Red)
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- STABLE (Black line)
- ROAD (Grey line)
- RAILWAY (Dashed line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

66A02NW	66A02NE	66A06NW
66A02SW	66A02SE	SEA
66A03NW	66A03NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



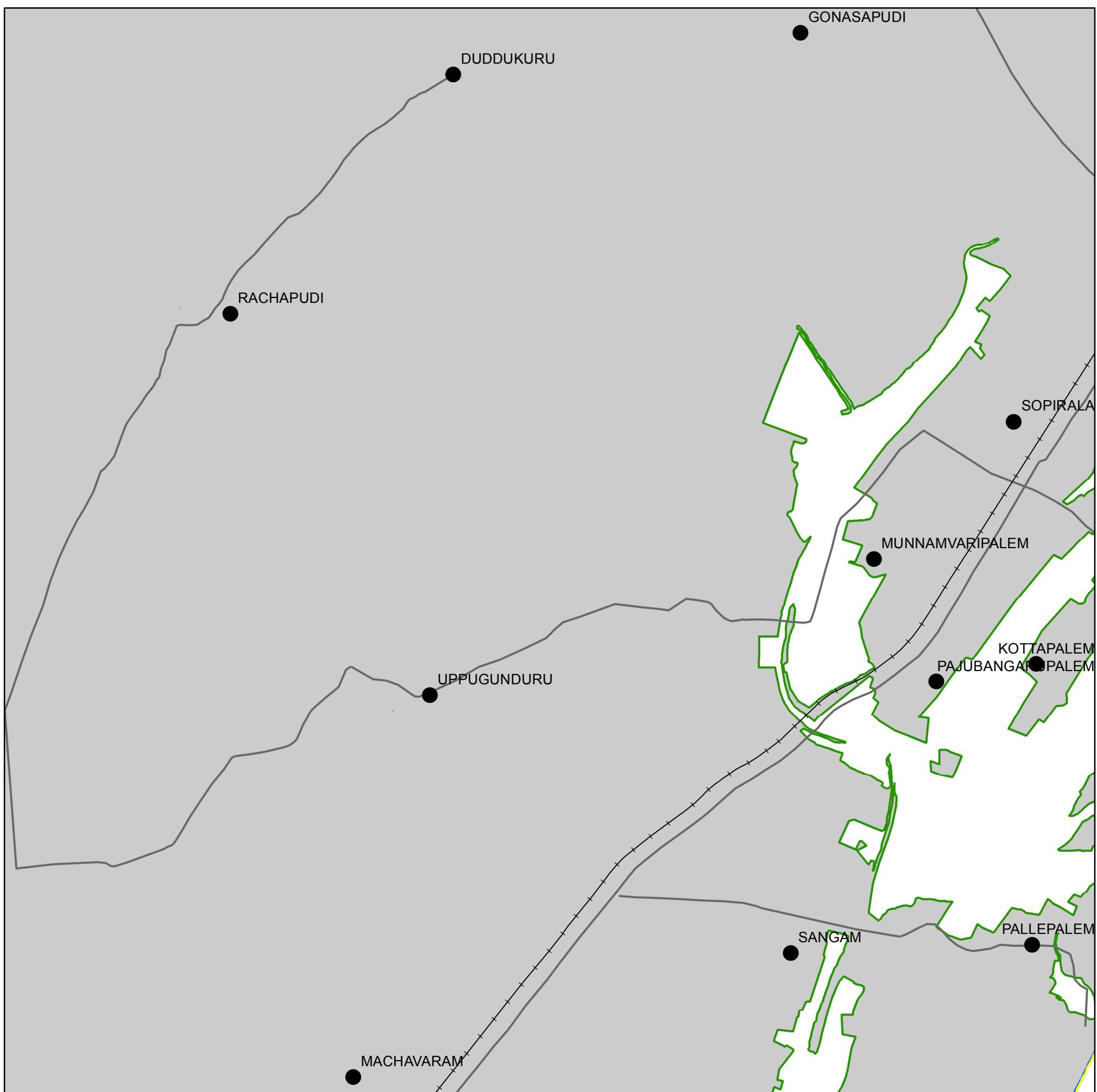
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

PRAKASAM DISTRICT

ANDHRA PRADESH

SHEET NO. 66A02NE



## Legend

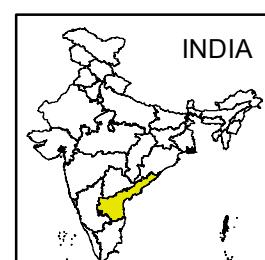
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

66A01SW	66A01SE	66A05SW
66A02NW	66A02NE	66A06NW
66A02SW	66A02SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

PRAKASAM DISTRICT

ANDHRA PRADESH

SHEET NO. 66A06NW



## Legend

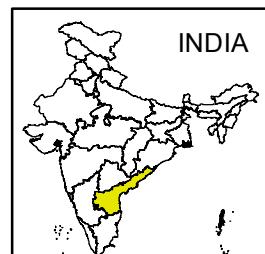
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

66A01SE	66A05SW	66A05SE
66A02NE	66A06NW	SEA
66A02SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

PRAKASAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A05SW



## Legend

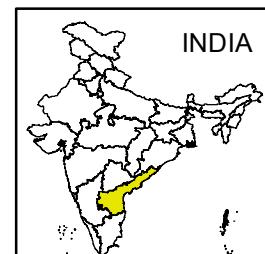
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- ROAD (Grey line)
- RAILWAY (Crossed lines)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

66A01NE	66A05NW	66A05NE
66A01SE	66A05SW	66A05SE
66A02NE	66A06NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

PRAKASAM/GUNTUR  
DISTRICT

**ANDHRA PRADESH**

FOR OFFICIAL USE ONLY  
SHEET NO. 66A05SE



## Legend

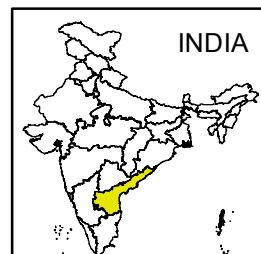
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

66A05NW	66A05NE	66A09NW
66A05SW	66A05SE	66A09SW
66A06NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



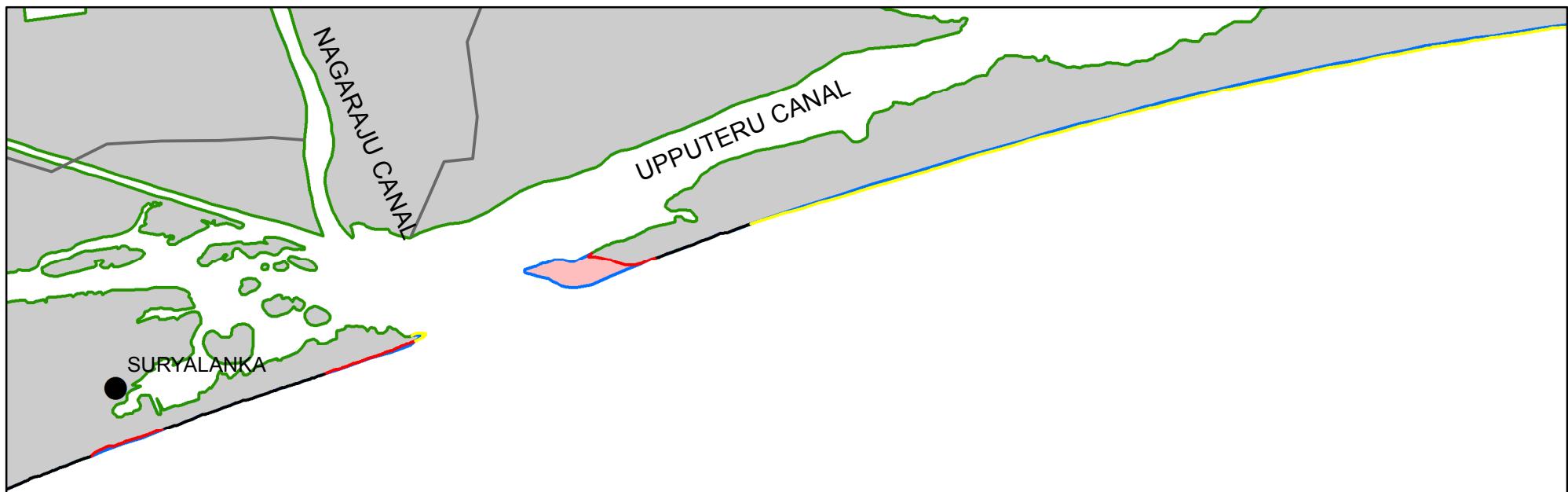
# SHORELINE CHANGE MAP

GUNTUR DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A09SW



BAY  
OF  
BENGAL

## Legend

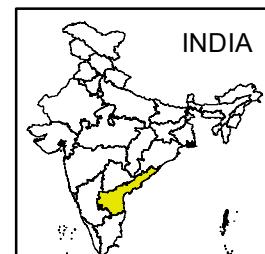
- [Red Box] EROSION
- [Yellow Box] ACCRETION
- [Green Line] HIGH-TIDE LINE 2014-16
- [Blue Line] HIGH-TIDE LINE 2004-06
- [Black Line] STABLE
- [Grey Line] ROAD
- [Black Circle] HABITATION



0 2 km

## INDEX TO SHEETS

66A05NE	66A09NW	66A09NE
66A05SE	66A09SW	66A09SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

GUNTUR DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A09SE

BAY  
OF  
BENGAL

## Legend

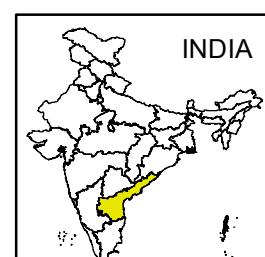
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06



0 2 km

## INDEX TO SHEETS

66A09NW	66A09NE	66A13NW
66A09SW	66A09SE	66A13SW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



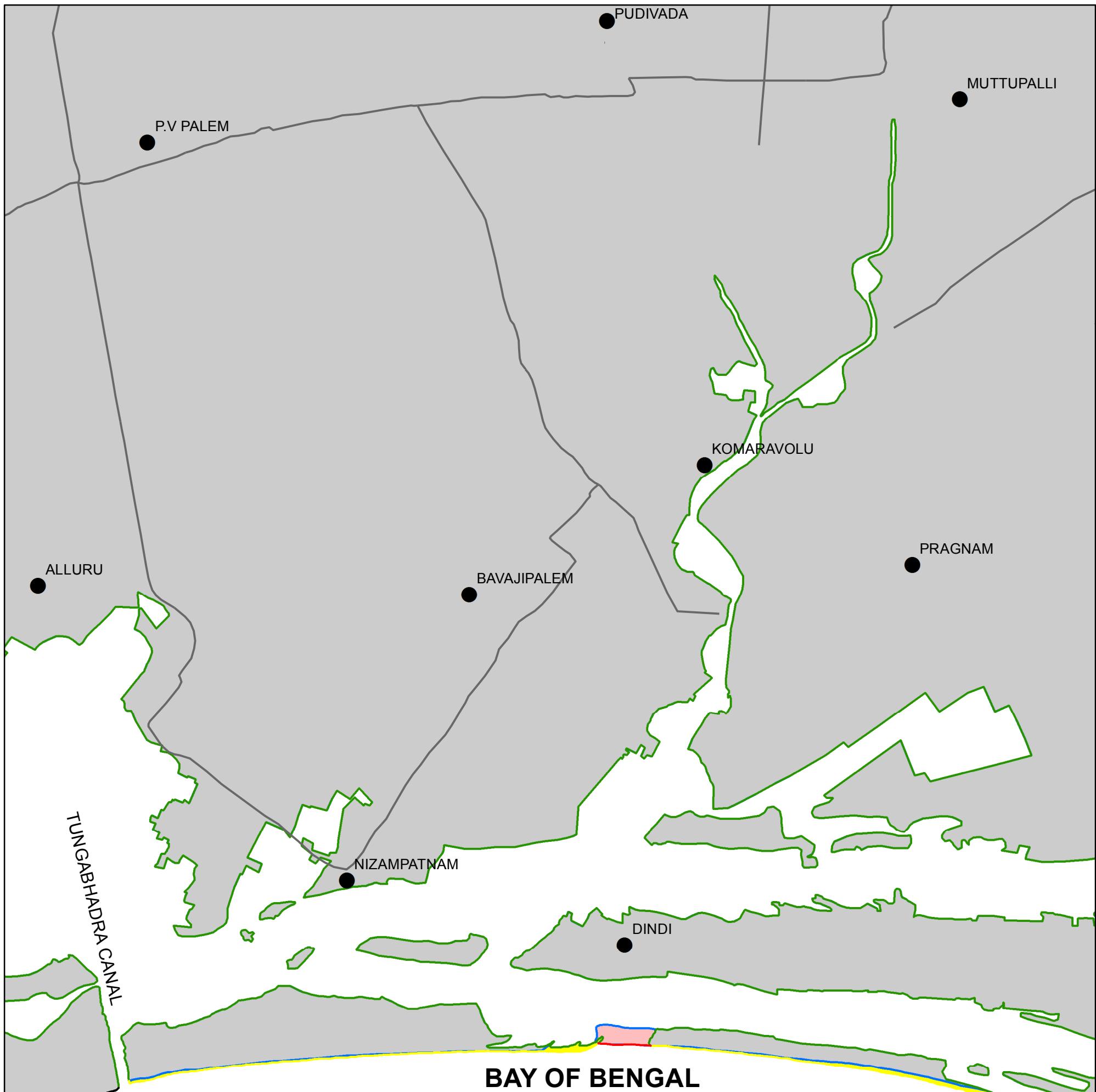
# SHORELINE CHANGE MAP

GUNTUR DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A09NE



## Legend

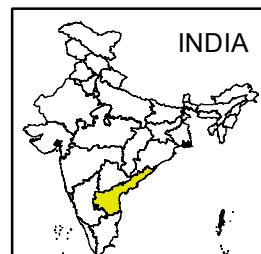
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65D12SW	65D12SE	65D16SW
66A09NW	66A09NE	66A13NW
66A09SW	66A09SE	66A13SW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

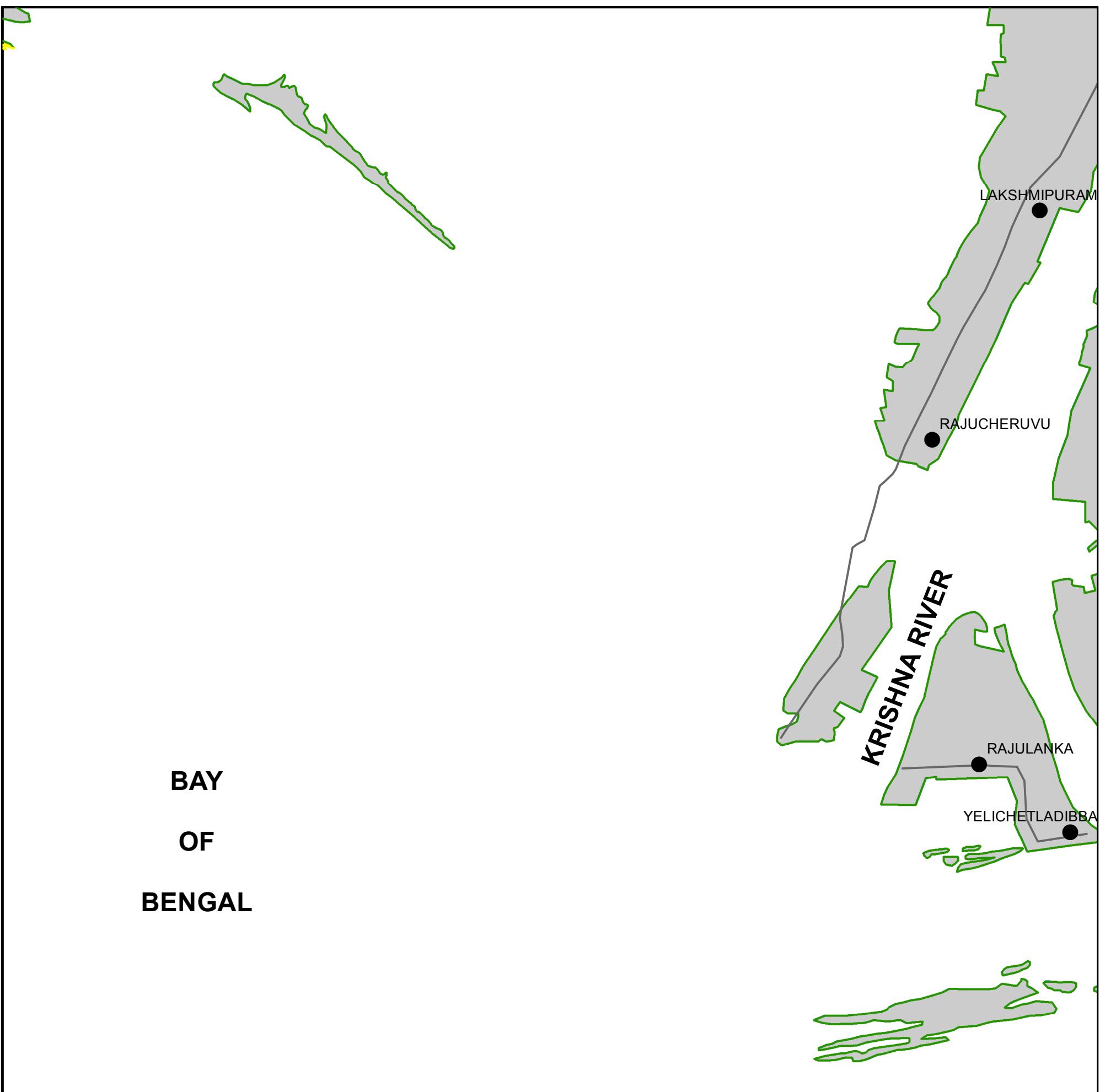


# SHORELINE CHANGE MAP

GUNTUR/KRISHNA DISTRICT ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A13SW



## Legend

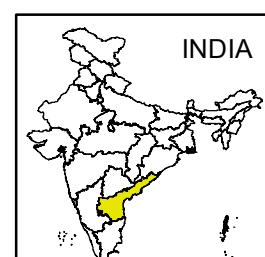
- ACCRETION (Yellow)
- ROAD (Grey line)
- HIGH-TIDE LINE 2014-16 (Green line)
- HIGH-TIDE LINE 2004-06 (Blue line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

66A09NE	66A13NW	66A13NE
66A09SE	66A13SW	66A13SE
SEA	66A14NW	66A14NE



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

GUNTUR/KRISHNA DISTRICT

**ANDHRA PRADESH**

SHEET NO. 66A14NW

BAY  
OF  
BENGAL

**Legend**

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE

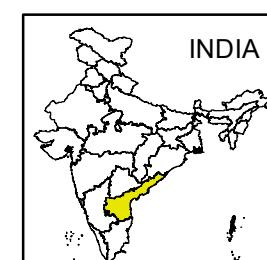


0

2 km

INDEX TO SHEETS

66A09SE	66A13SW	66A13SE
SEA	66A14NW	66A14NE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



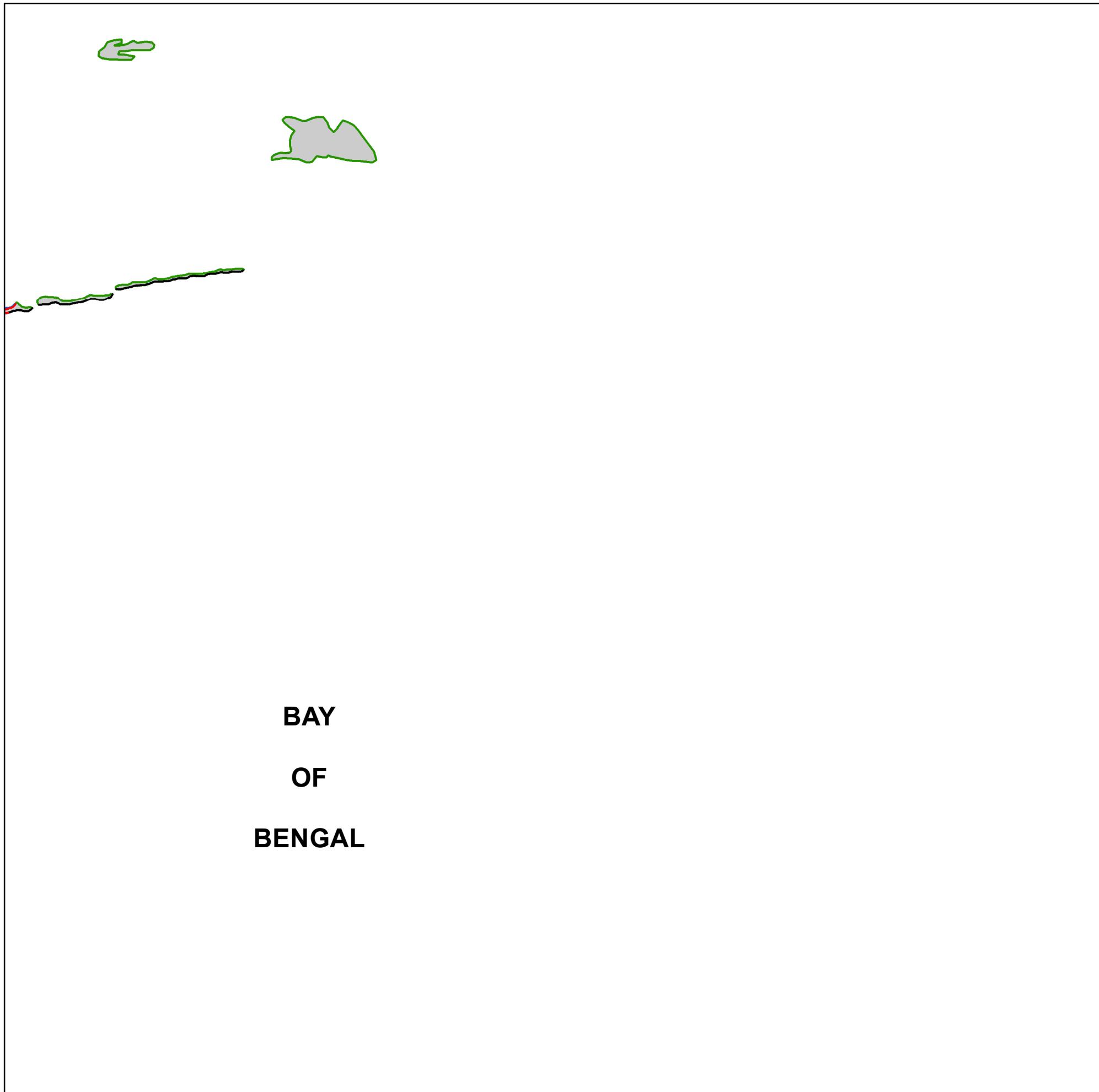
# SHORELINE CHANGE MAP

KRISHNA DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 66A14NE



## Legend

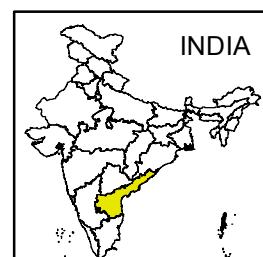
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km

## INDEX TO SHEETS

66A13SW	66A13SE	66E01SW
66A14NW	66A14NE	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



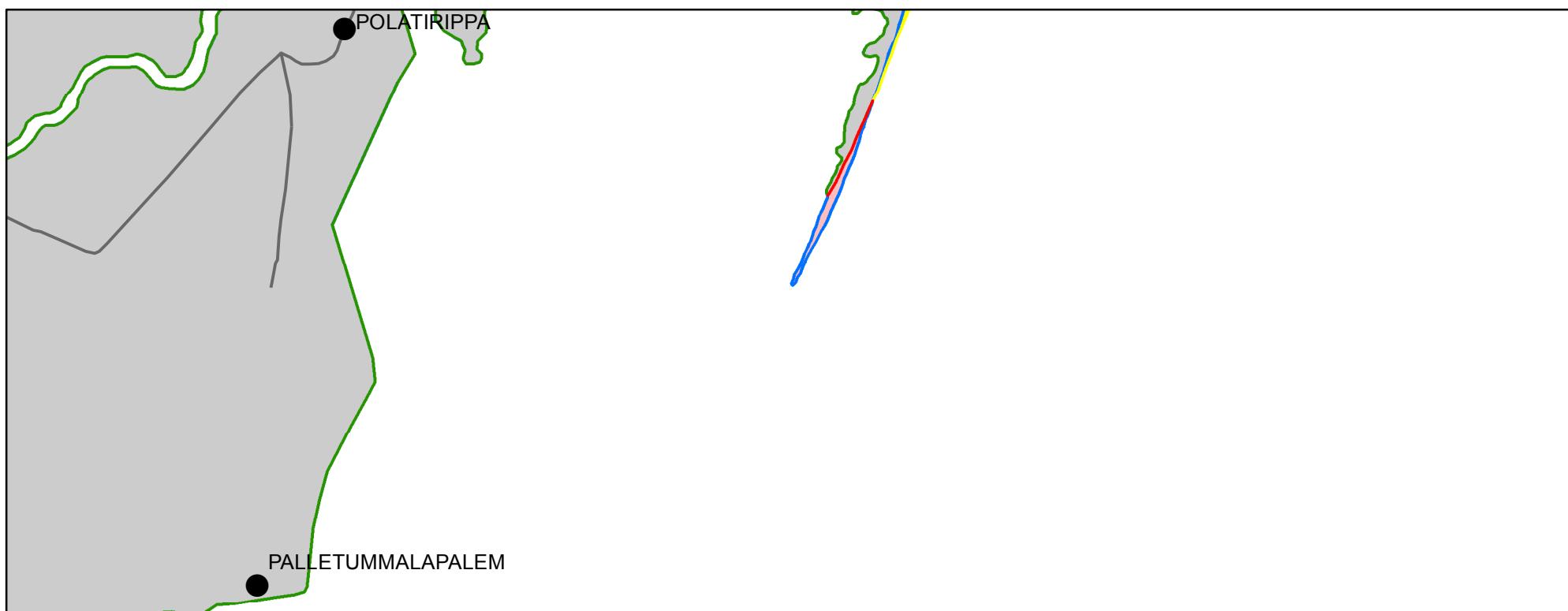
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KRISHNA DISTRICT

ANDHRA PRADESH

SHEET NO. 65H04SE



BAY  
OF  
BENGAL

## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

65H04NW	65H04NE	SEA
65H04SW	65H04SE	SEA
66E01NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



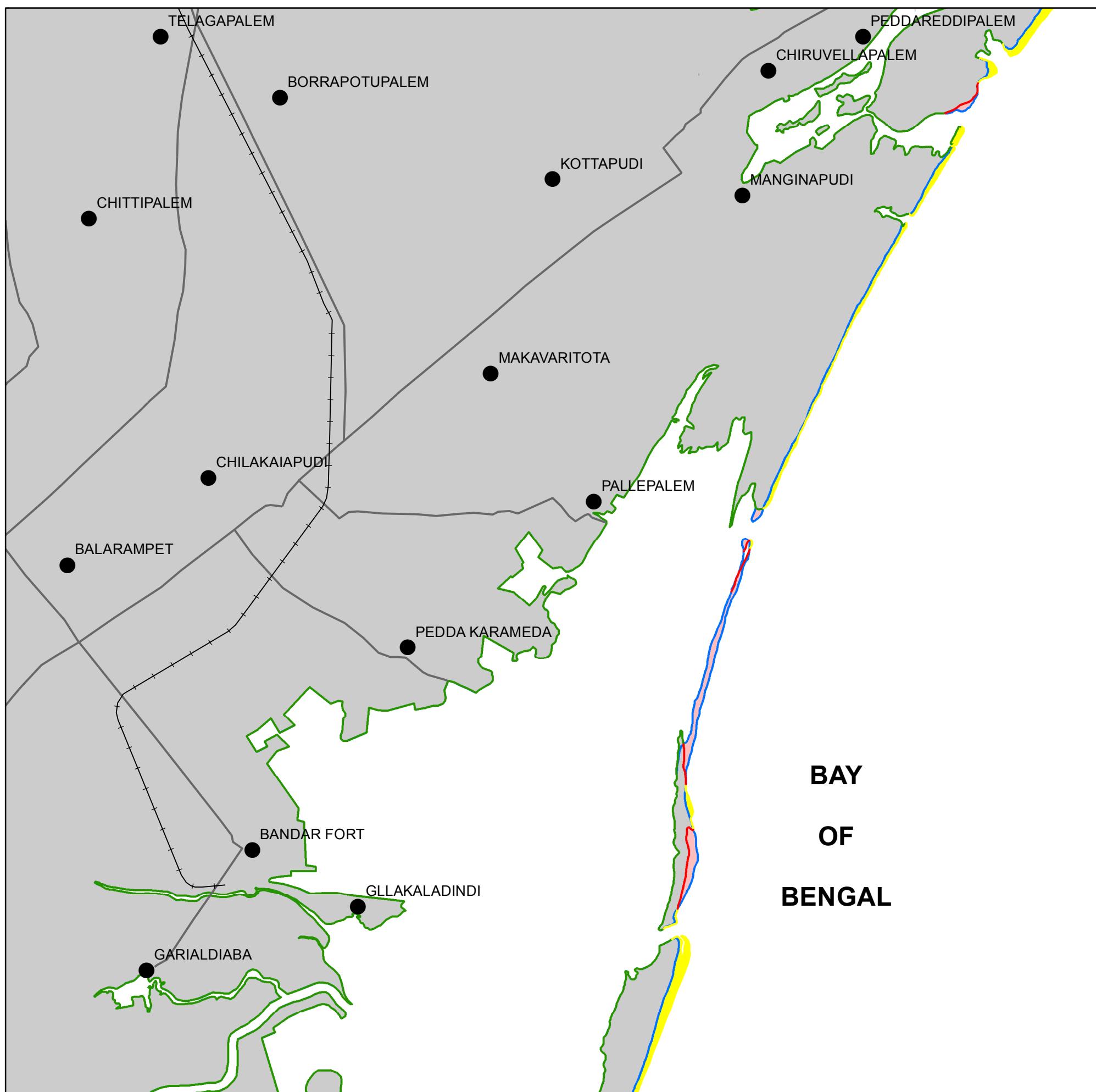
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KRISHNA DISTRICT

ANDHRA PRADESH

SHEET NO. 65H04NE



## Legend

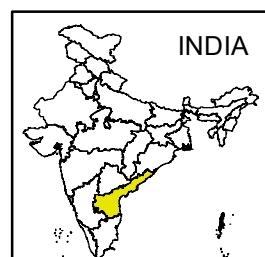
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- +— RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

65H03SW	65H03SE	65H07SW
65H04NW	65H04NE	SEA
65H04SW	65H04SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



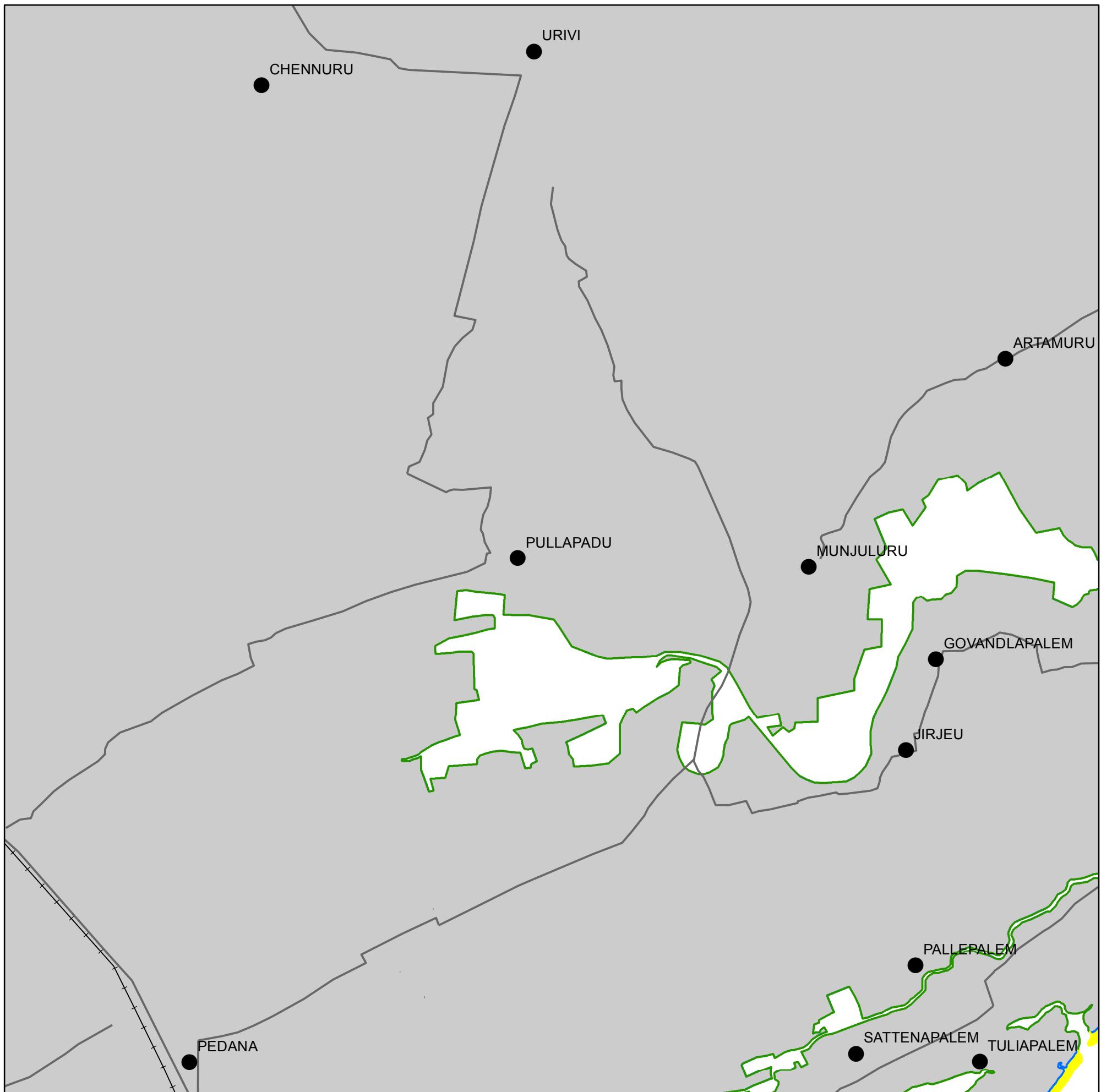
# SHORELINE CHANGE MAP

KRISHNA DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H03SE



## Legend

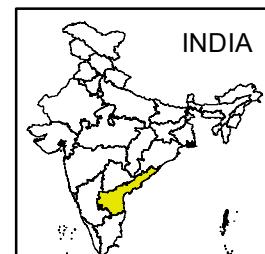
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

65H03NW	65H03NE	65H07NW
65H03SW	65H03SE	65H07SW
65H04NW	65H04NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



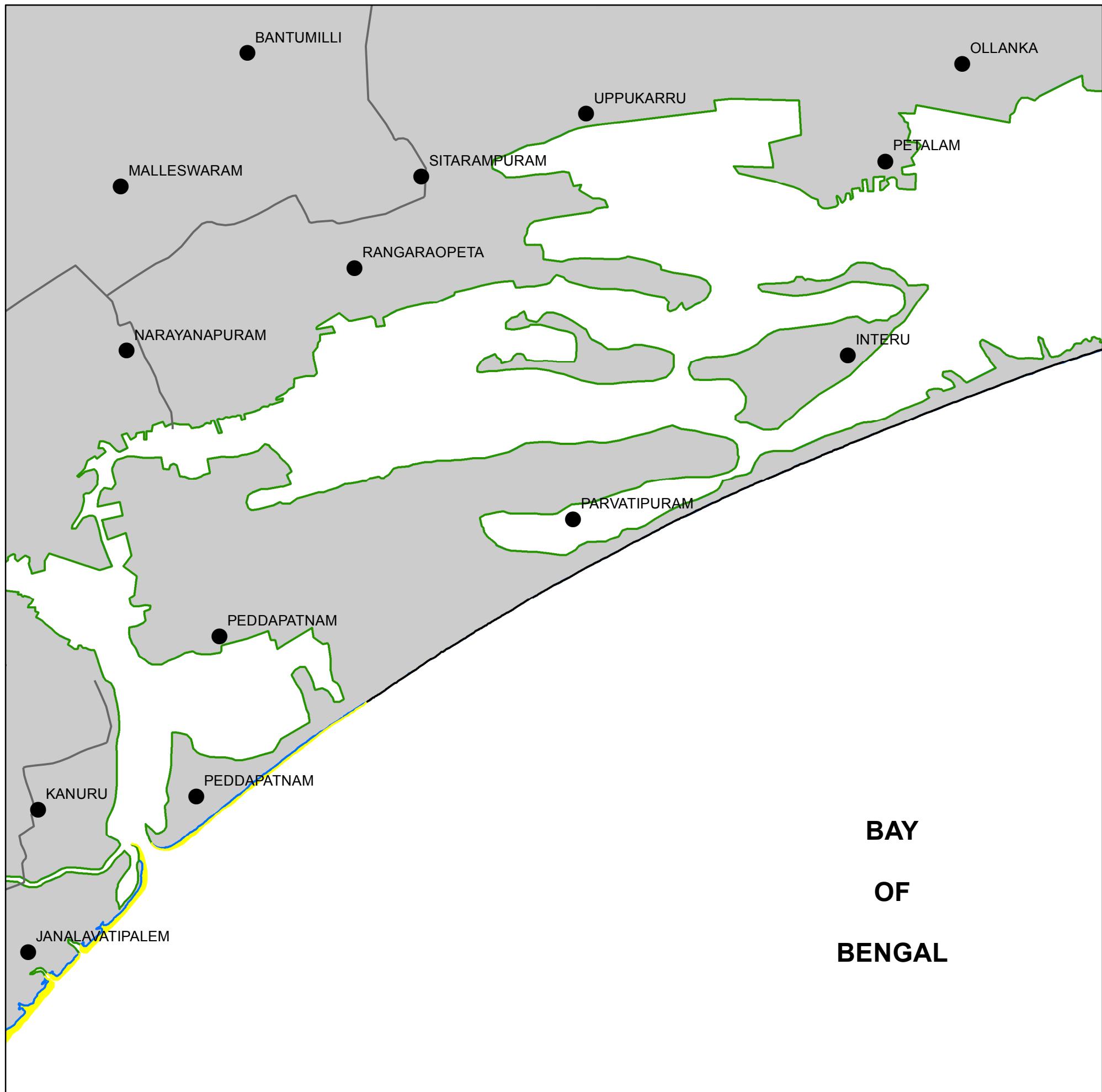
# SHORELINE CHANGE MAP

KRISHNA DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H07SW



## Legend

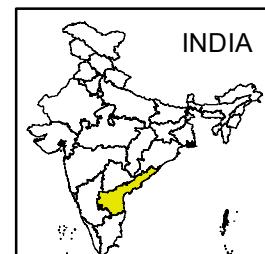
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65H03NE	65H07NW	65H07NE
65H03SE	65H07SW	65H07SE
65H04NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



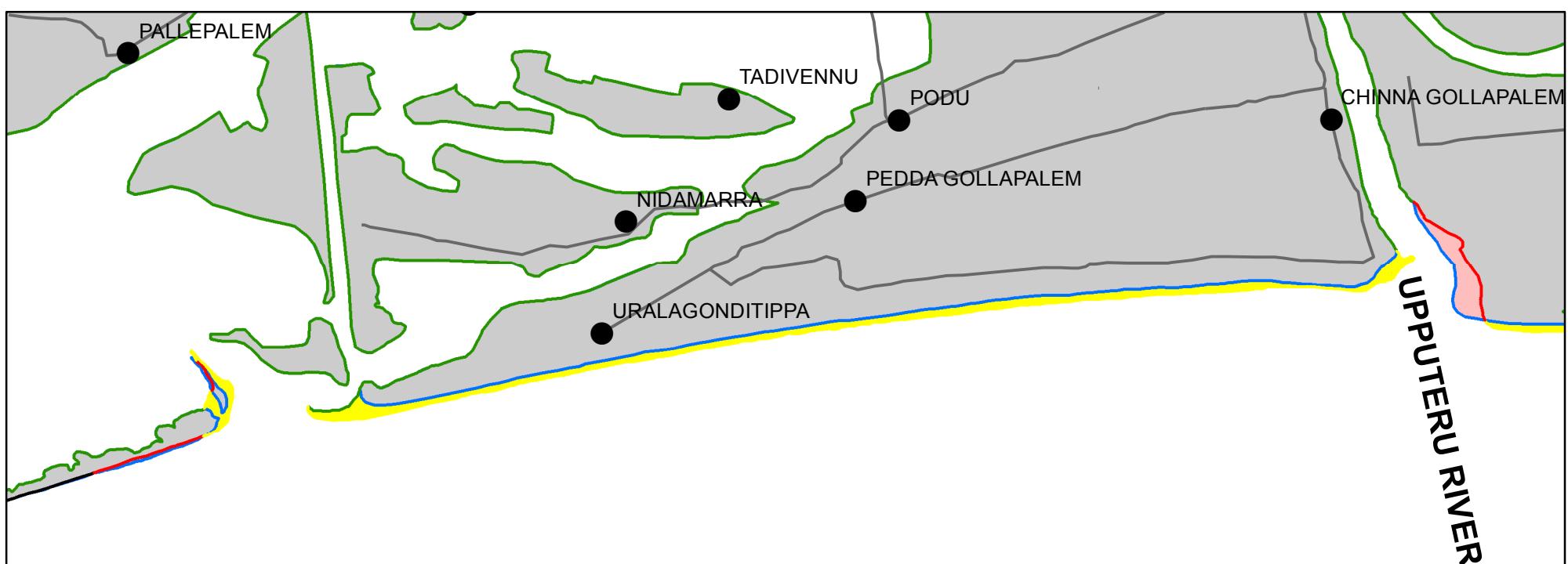
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

KRISHNA DISTRICT

ANDHRA PRADESH

SHEET NO. 65H07SE



BAY  
OF  
BENGAL

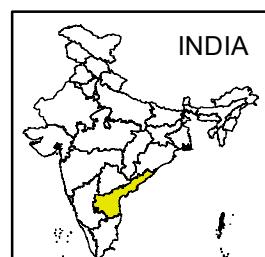
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

65H07NW	65H07NE	65H11NW
65H07SW	65H07SE	65H11SW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



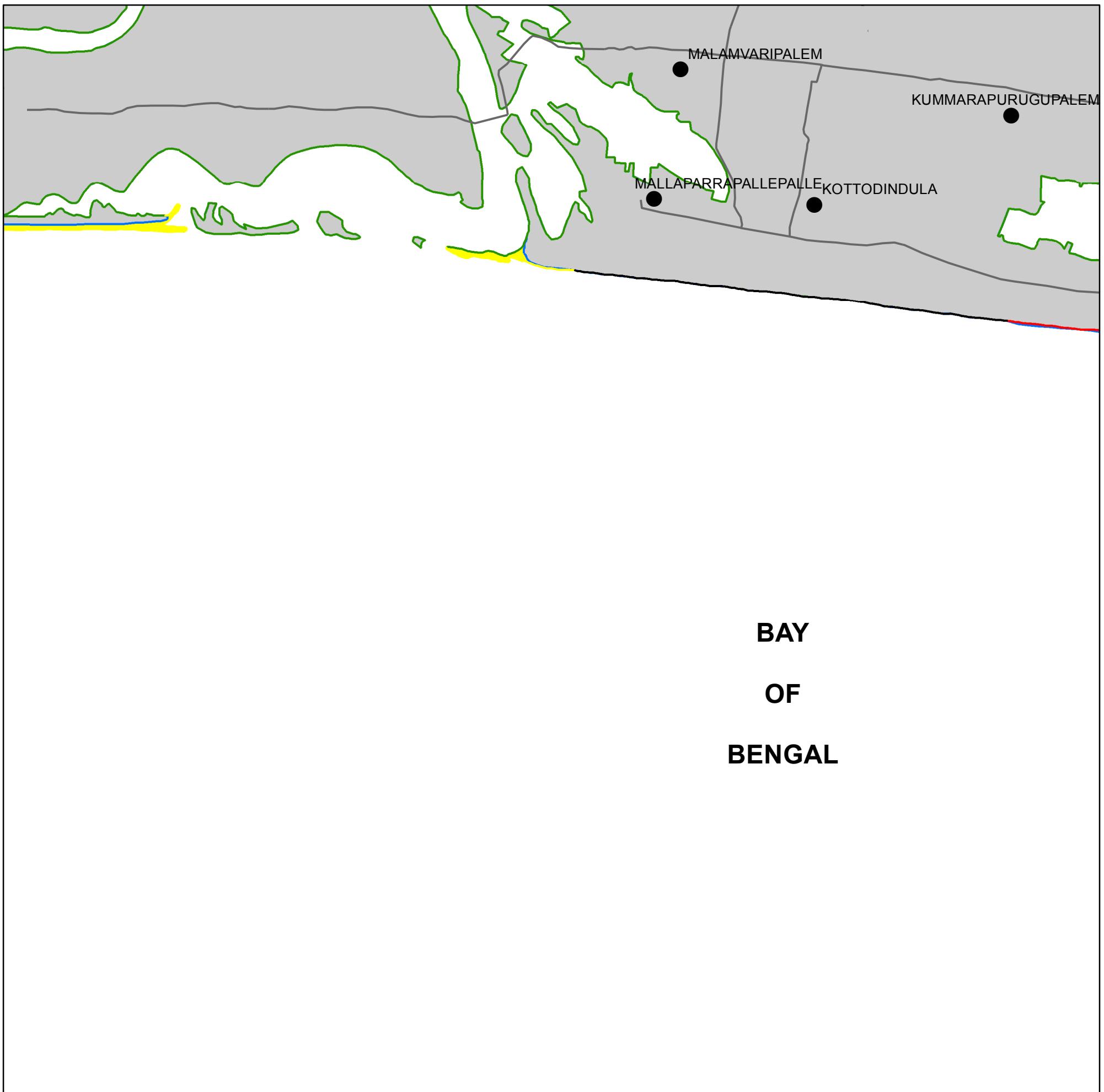
# SHORELINE CHANGE MAP

KRISHNA/WEST GODAVARI  
DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H11SW



**Legend**

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION

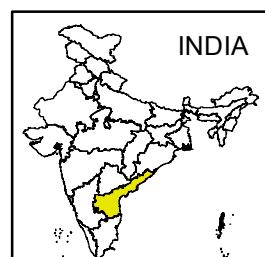


0

2 km

INDEX TO SHEETS

65H07NE	65H11NW	65H11NE
65H07SE	65H11SW	65H11SE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



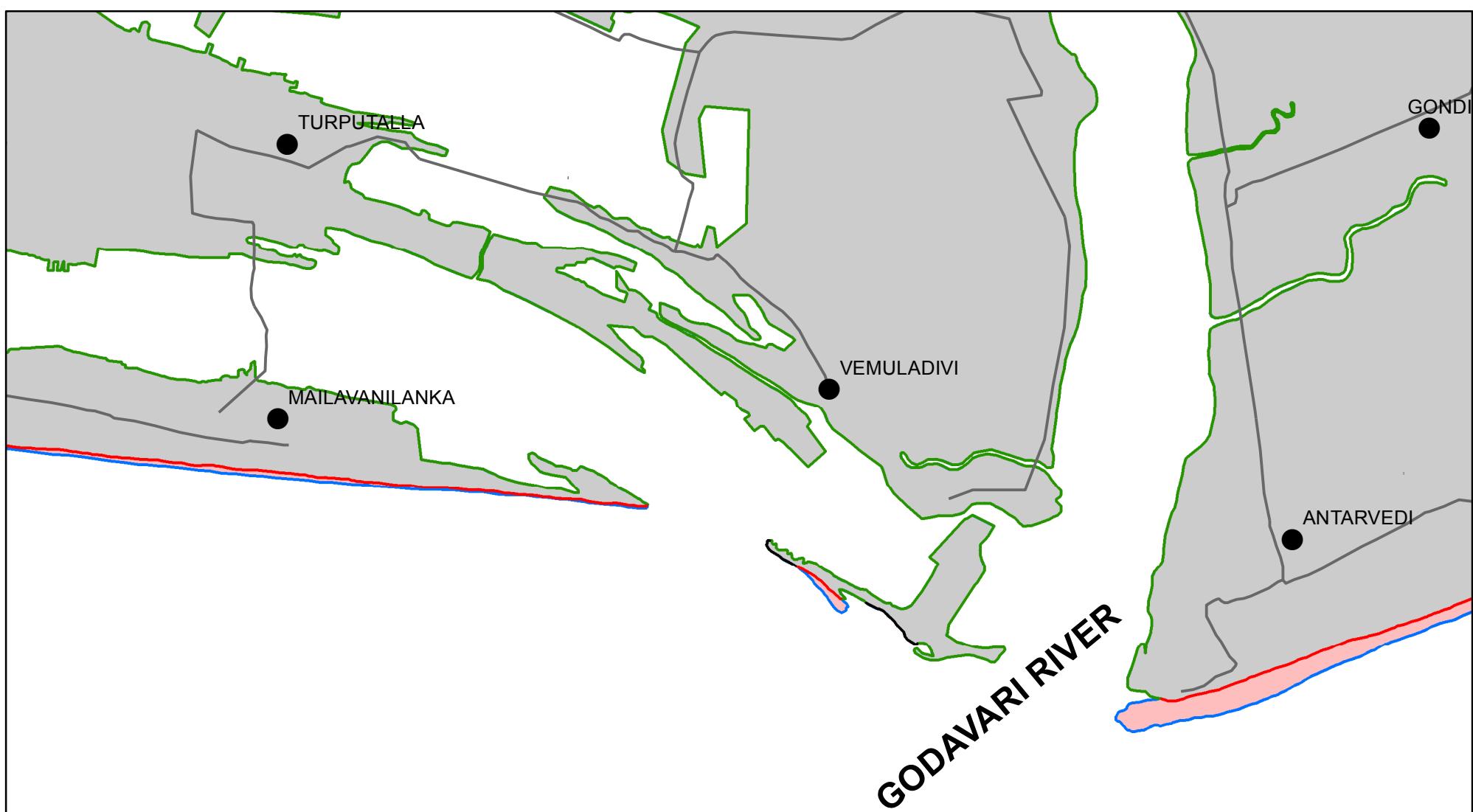
# SHORELINE CHANGE MAP

WEST GODAVARI/EAST GODAVARI  
DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H11SE



BAY  
OF  
BENGAL

**Legend**

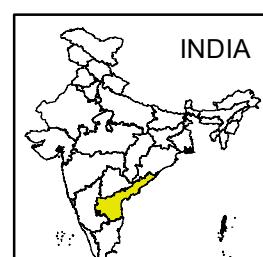
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

INDEX TO SHEETS

65H11NW	65H11NE	65H15NW
65H11SW	65H11SE	65H15SW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



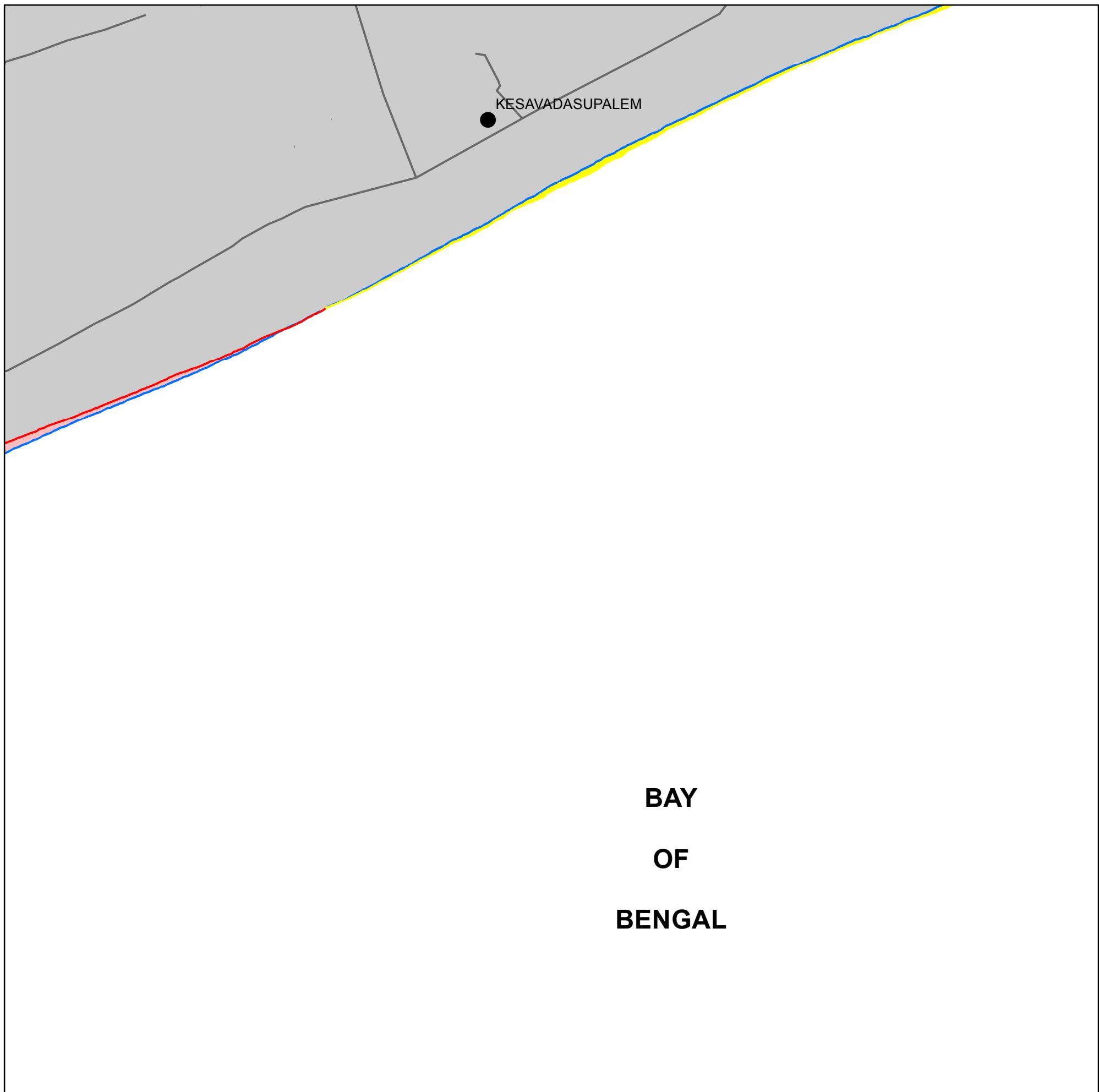
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H15SW



#### Legend

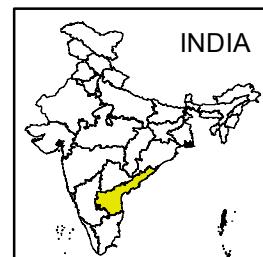
- EROSION (Red)
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- ROAD (Grey line)
- HABITATION (Black dot)



0 2 km

#### INDEX TO SHEETS

65H11NE	65H15NW	65H15NE
65H11SE	65H15SW	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



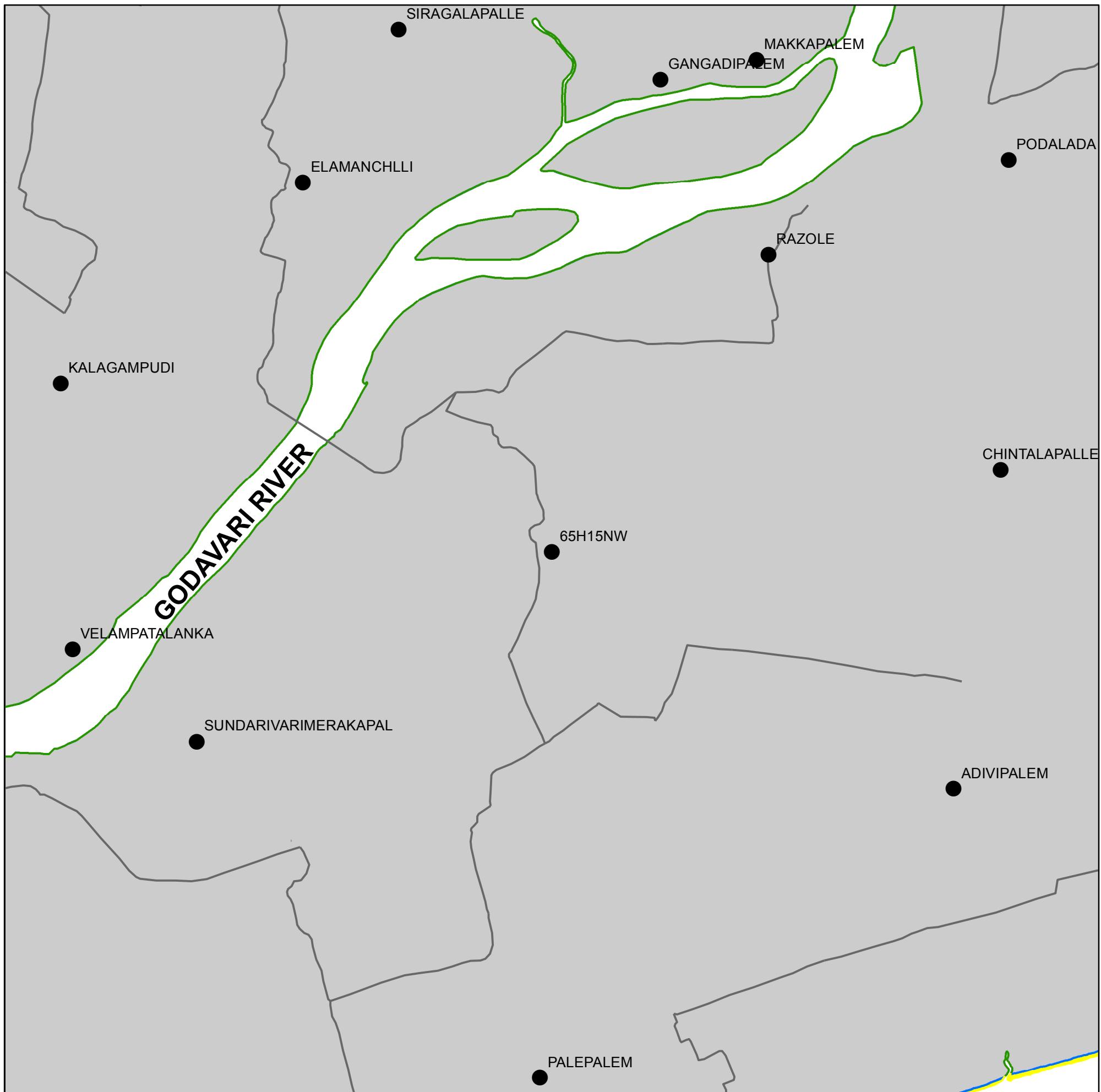
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

**ANDHRA PRADESH**

FOR OFFICIAL USE ONLY

SHEET NO. 65H15NW



## Legend

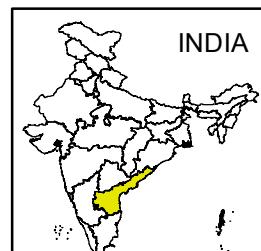
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65H10SE	65H14SW	65H14SE
65H11NE	65H15NW	65H15NE
65H11SE	65H15SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



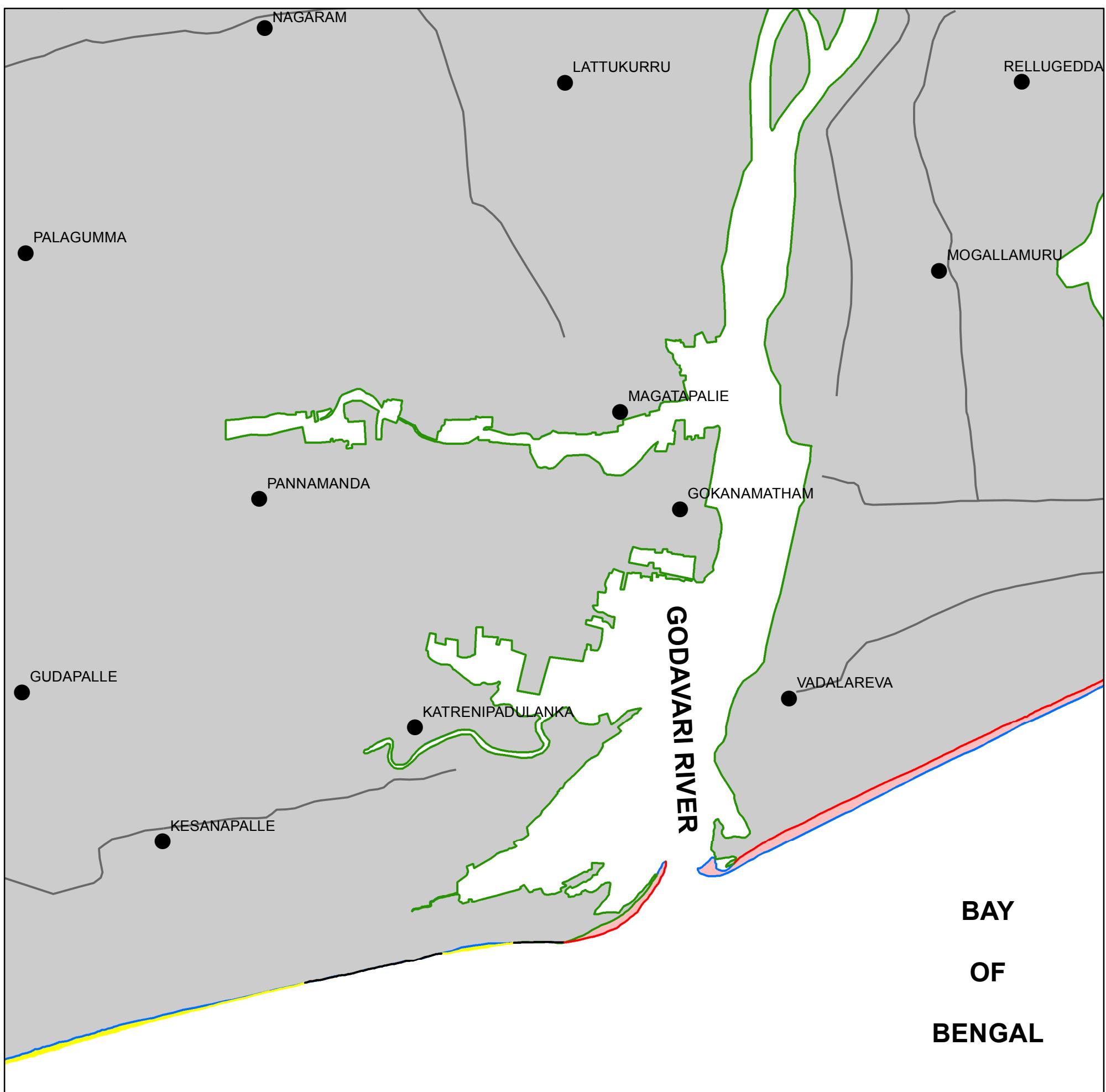
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65H15NE



## Legend

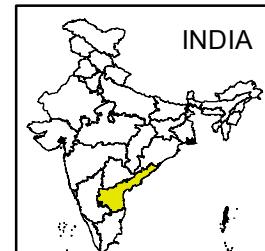
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65H14SW	65H14SE	65L02SW
65H15NW	65H15NE	65L03NW
65H15SW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



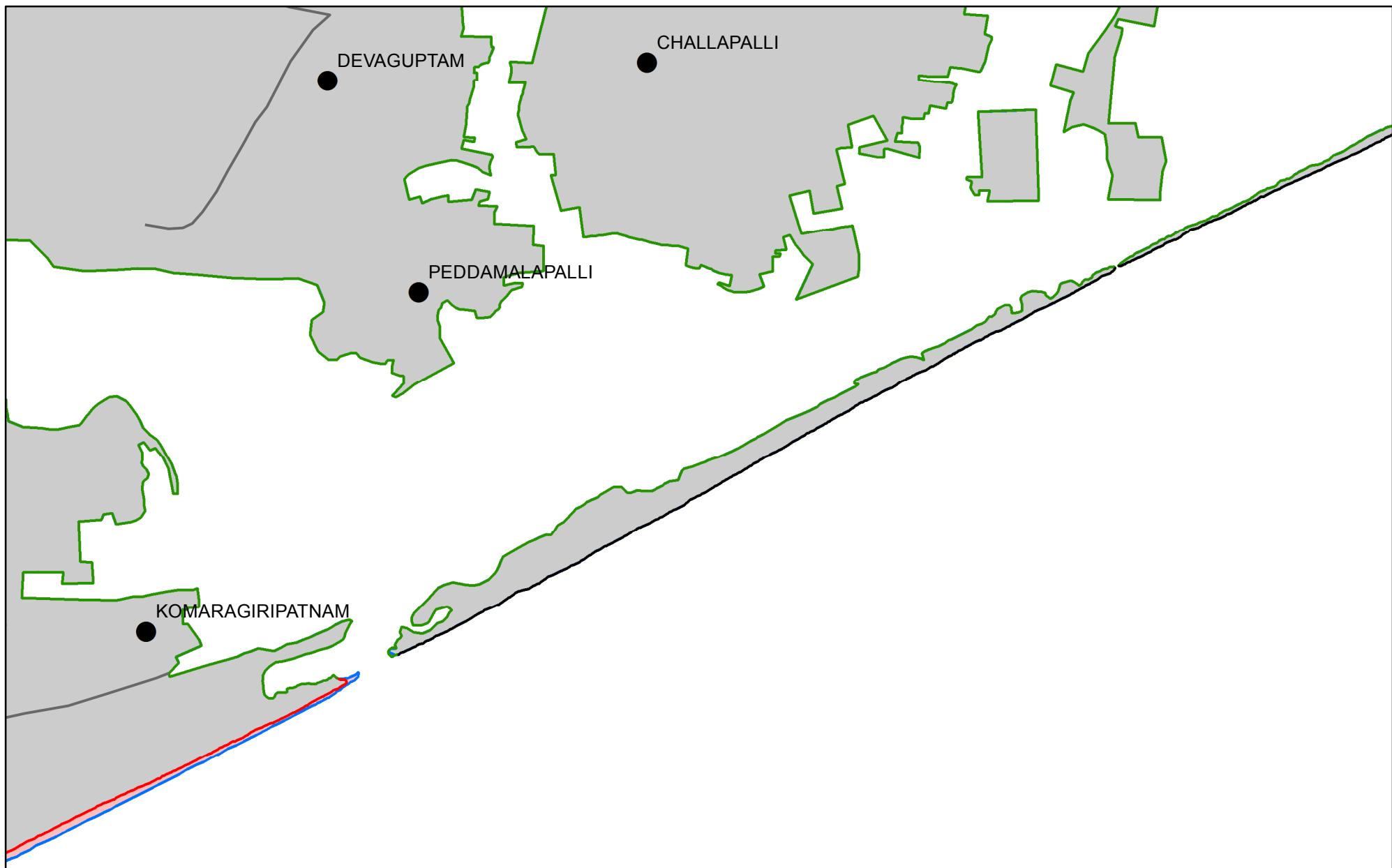
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L03NW



BAY  
OF  
BENGAL

## Legend

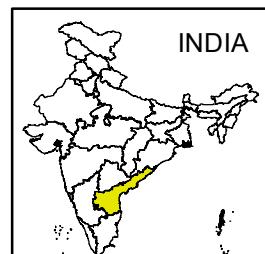
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65H14SE	65L02SW	65L02SE
65H15NE	65L03NW	65L03NE
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



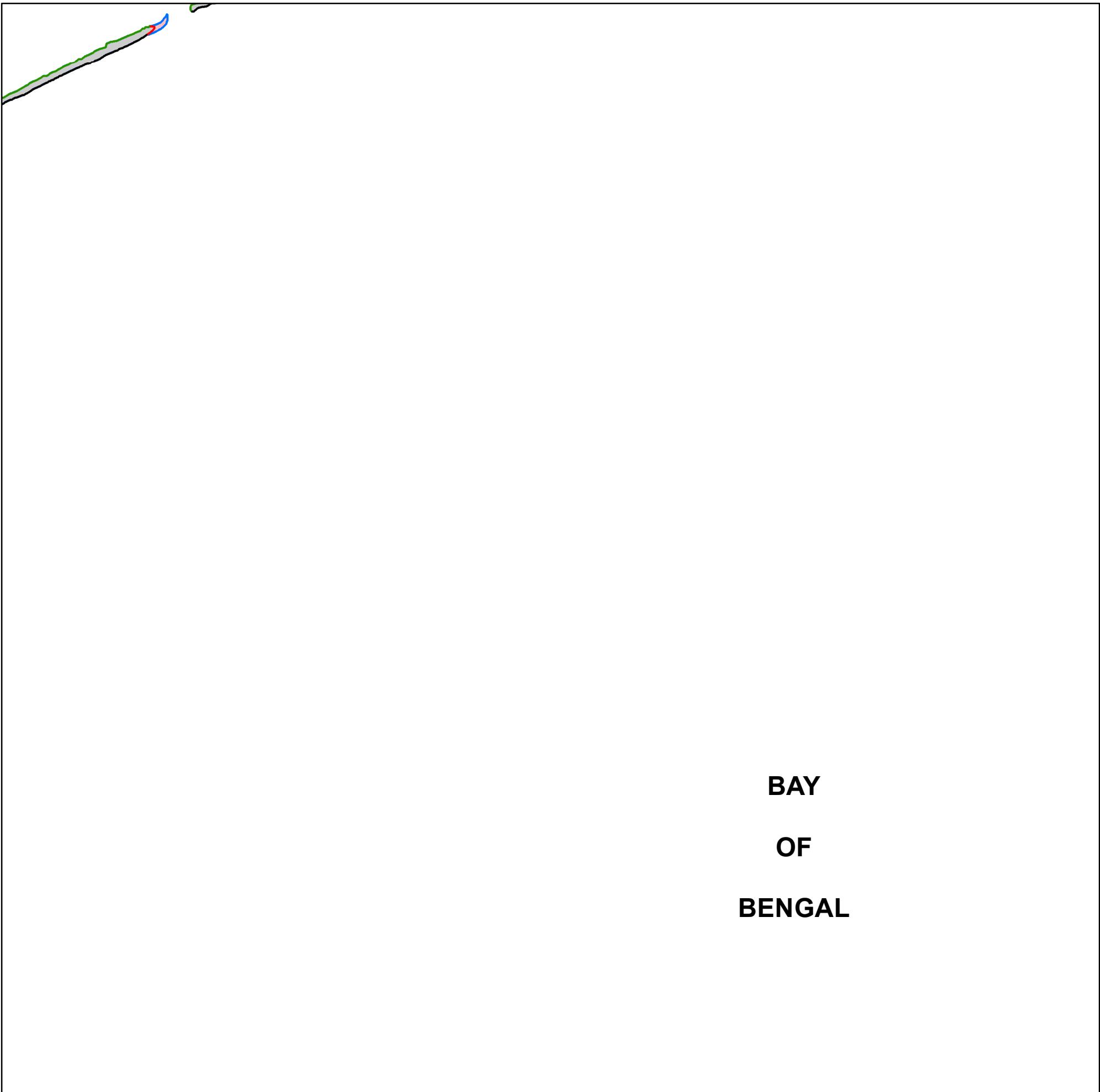
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L03NE



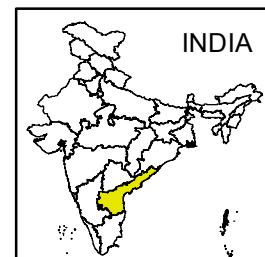
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km

65L02SW	65L02SE	65L06SW
65L03NW	65L03NE	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



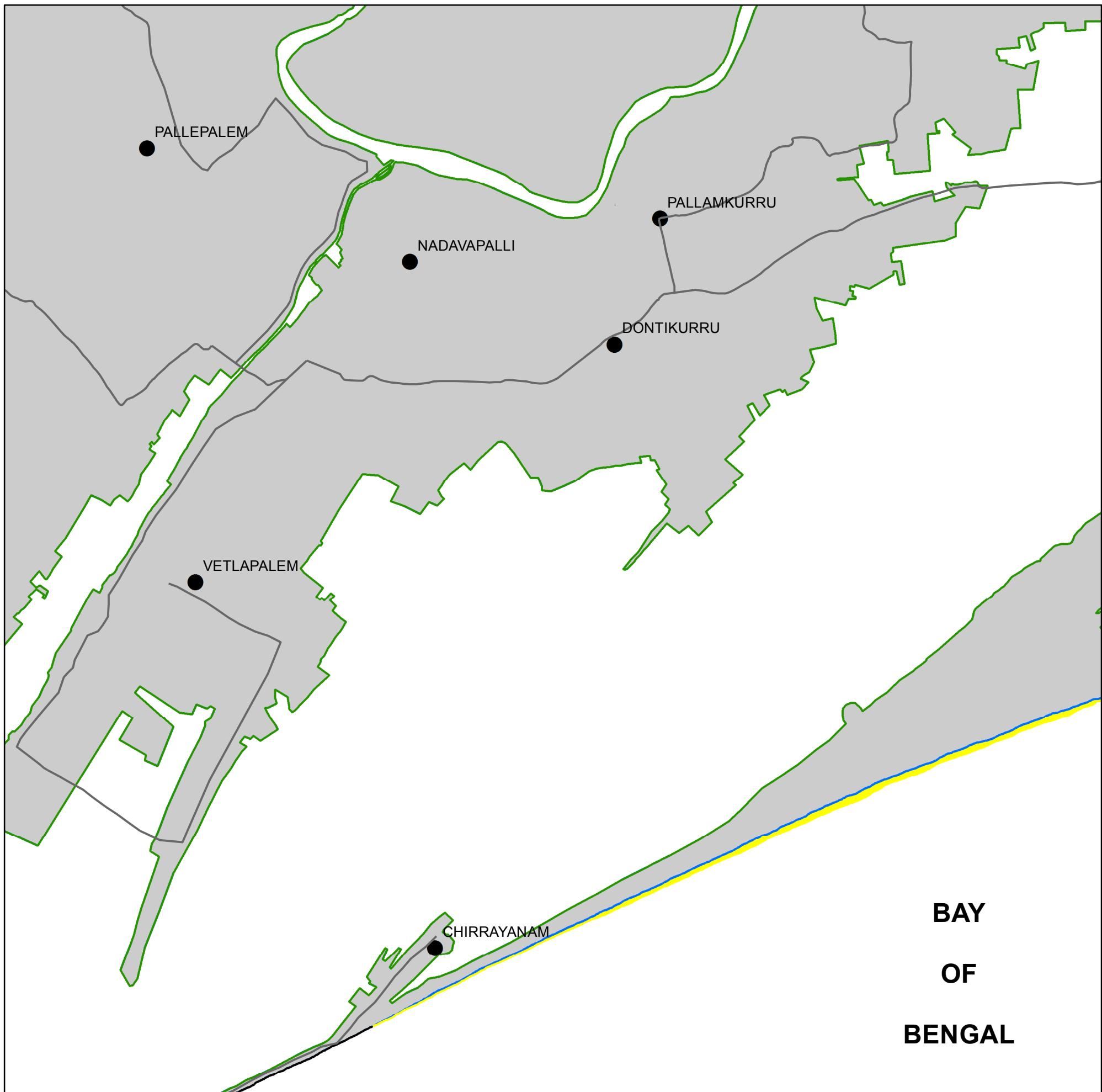
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

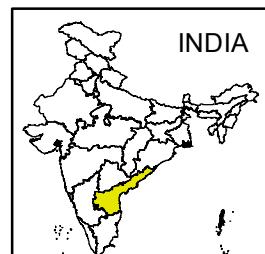
FOR OFFICIAL USE ONLY

SHEET NO. 65L02SE



0 2 km

65L02NW	65L02NE	65L06NW
65L02SW	65L02SE	65L06SW
65L03NW	65L03NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



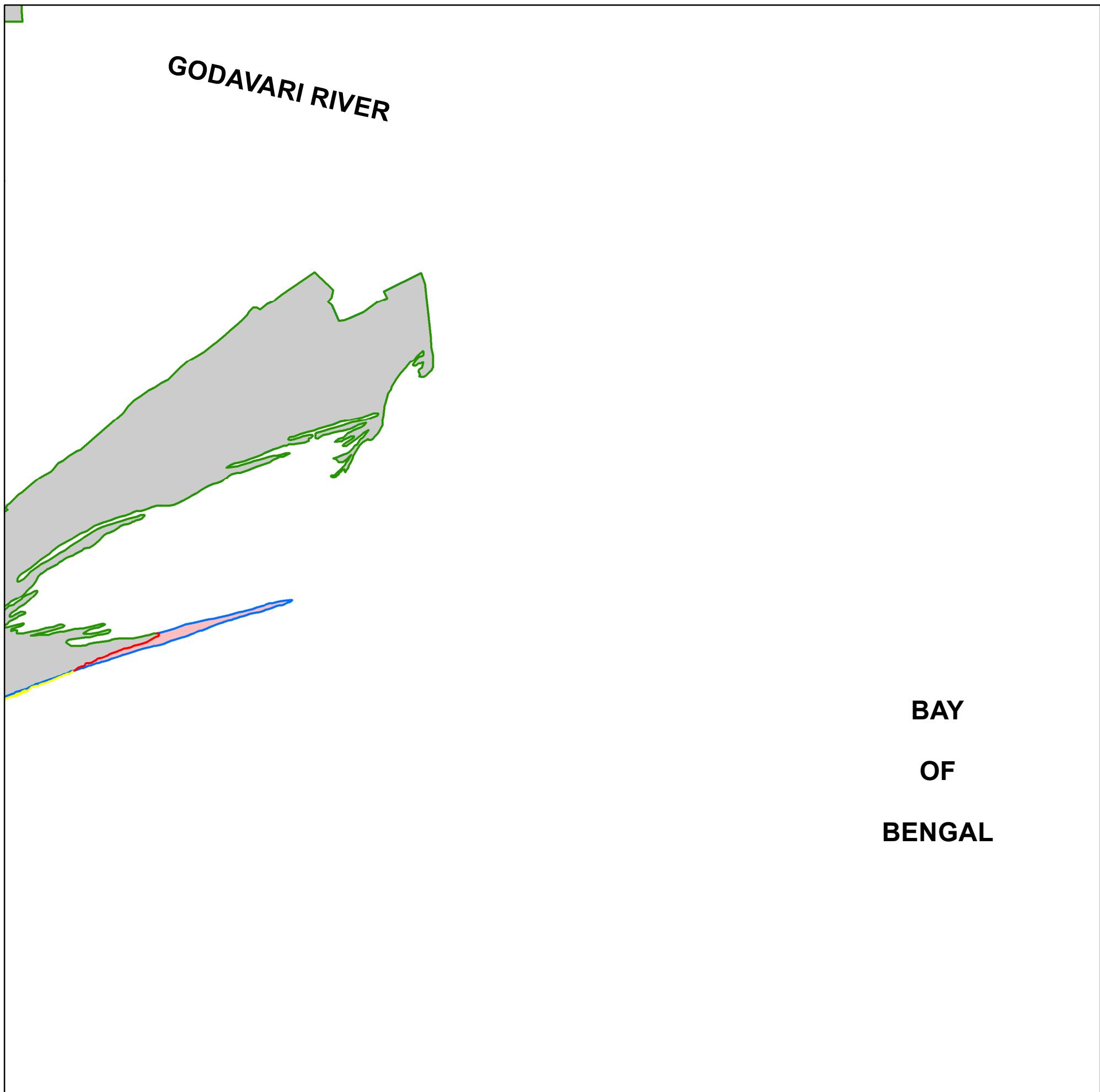
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L06SW



## Legend

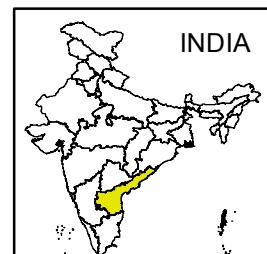
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06



0 2 km

## INDEX TO SHEETS

65L02NE	65L06NW	65L06NE
65L02SE	65L06SW	65L06SE
65L03NE	65L07NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



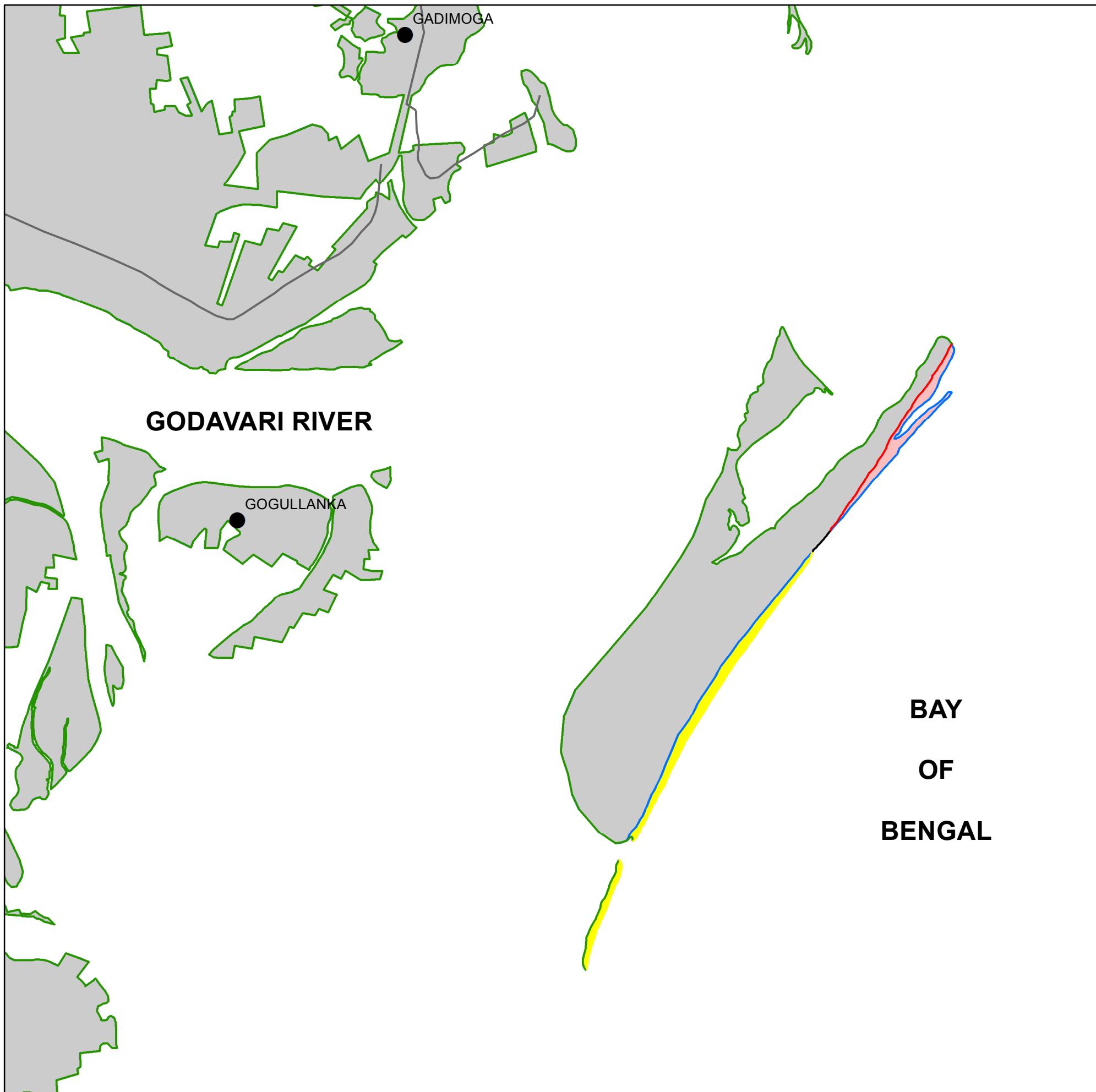
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L06NW



## Legend

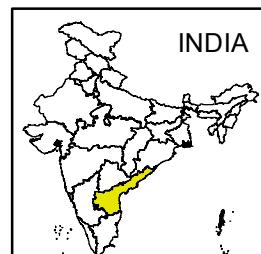
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65L01SE	65L05SW	SEA
65L02NE	65L06NW	SEA
65L02SE	65L06SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

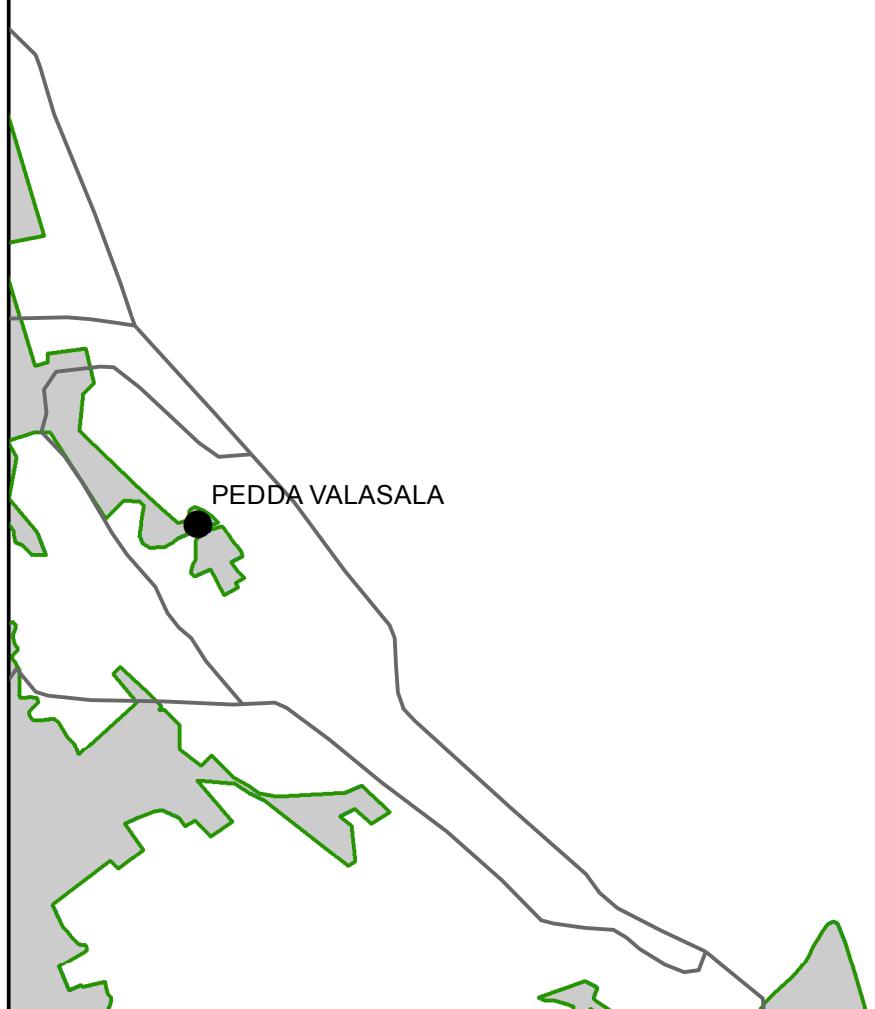
ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L05SW

KAKINADA BAY

BAY  
OF  
BENGAL



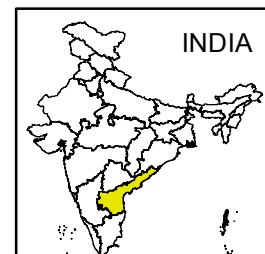
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

65L01NE	65L05NW	SEA
65L01SE	65L05SW	SEA
65L02NE	65L06NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



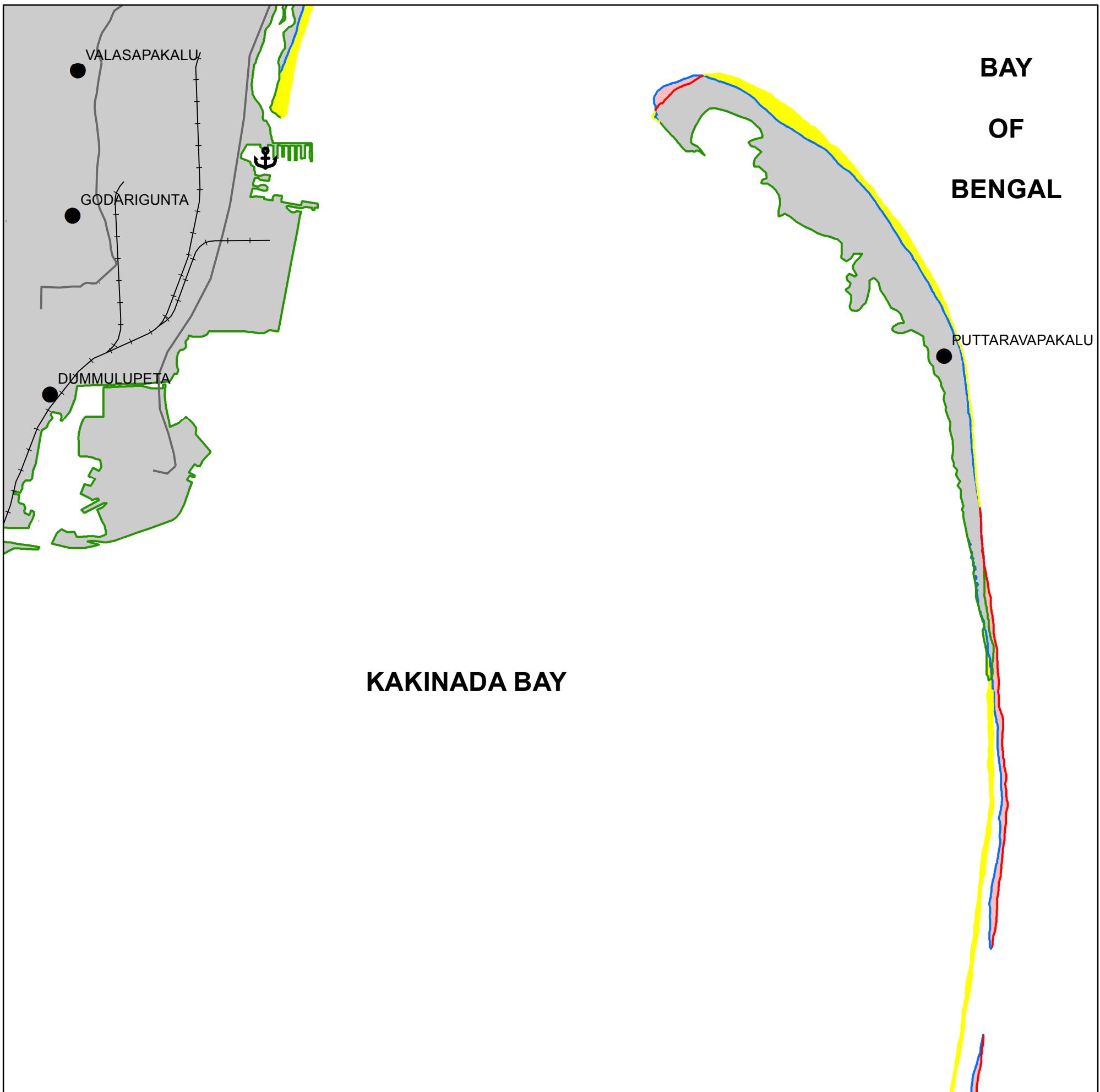
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65L05NW



## Legend

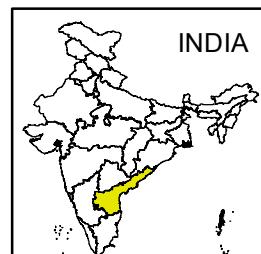
- [Red Box] EROSION
- [Yellow Box] ACCRETION
- [Green Line] HIGH-TIDE LINE 2014-16
- [Blue Line] HIGH-TIDE LINE 2004-06
- [Grey Line] ROAD
- [Dashed Line] RAILWAY
- [Anchor Icon] PORT/HARBOUR
- [Black Circle] HABITATION



0 2 km

## INDEX TO SHEETS

65K04SE	65K08SW	65K08SE
65L01NE	65L05NW	SEA
65L01SE	65L05SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



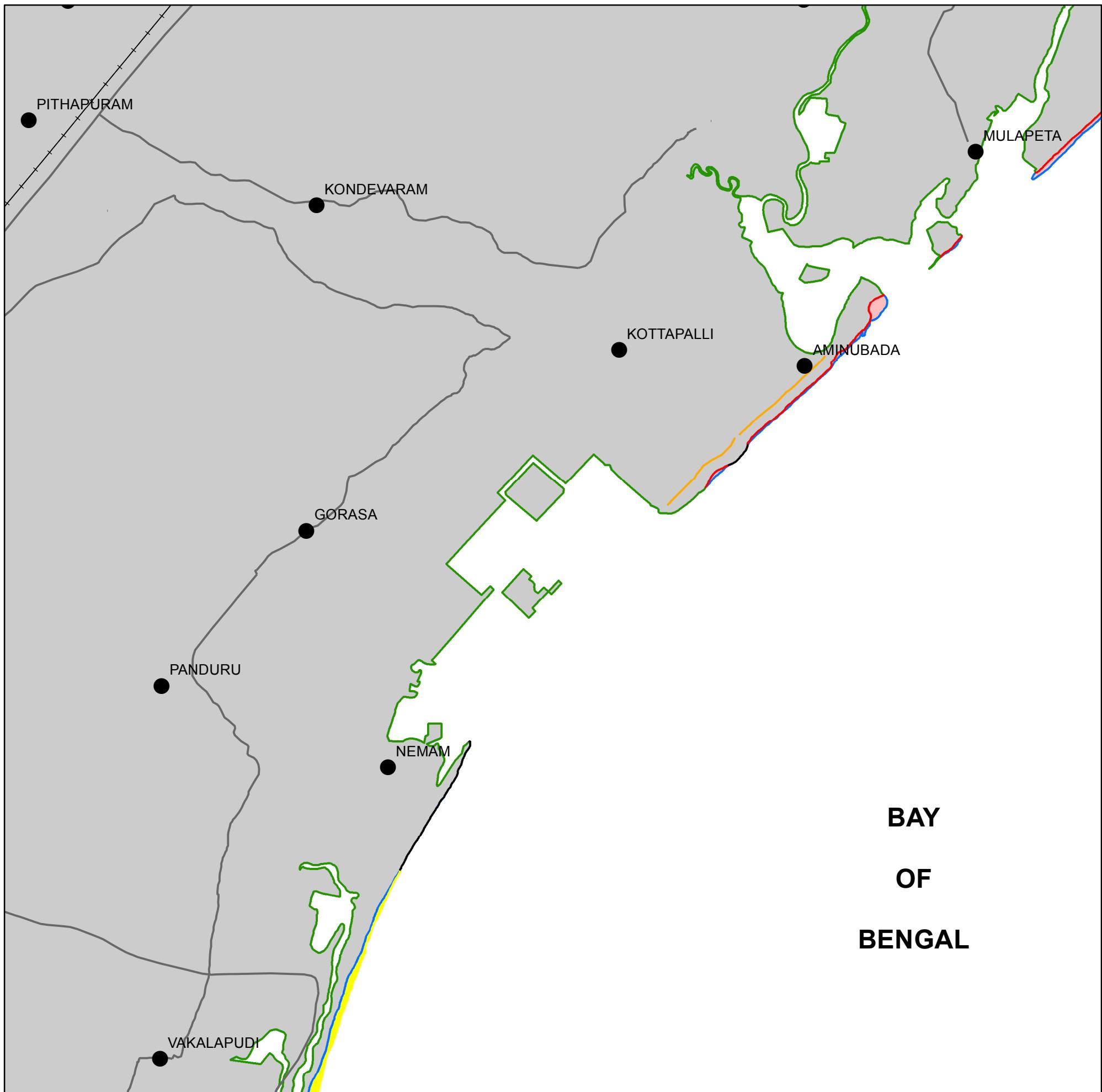
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K08SW



## Legend

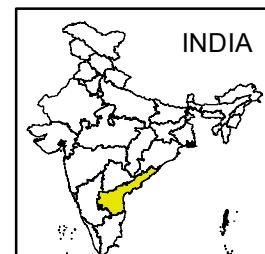
- EROSION (Red)
- ACCRETION (Yellow)
- HIGH-TIDE LINE 2014-16 (Green)
- HIGH-TIDE LINE 2004-06 (Blue)
- STABLE (Black line)
- ROAD (Grey line)
- RAILWAY (Line with cross-ticks)
- SEA WALL (Orange line)
- HABITATION (Black dot)



0 2 km

## INDEX TO SHEETS

65K04NE	65K08NW	65K08NE
65K04SE	65K08SW	65K08SE
65L01NE	65L05NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



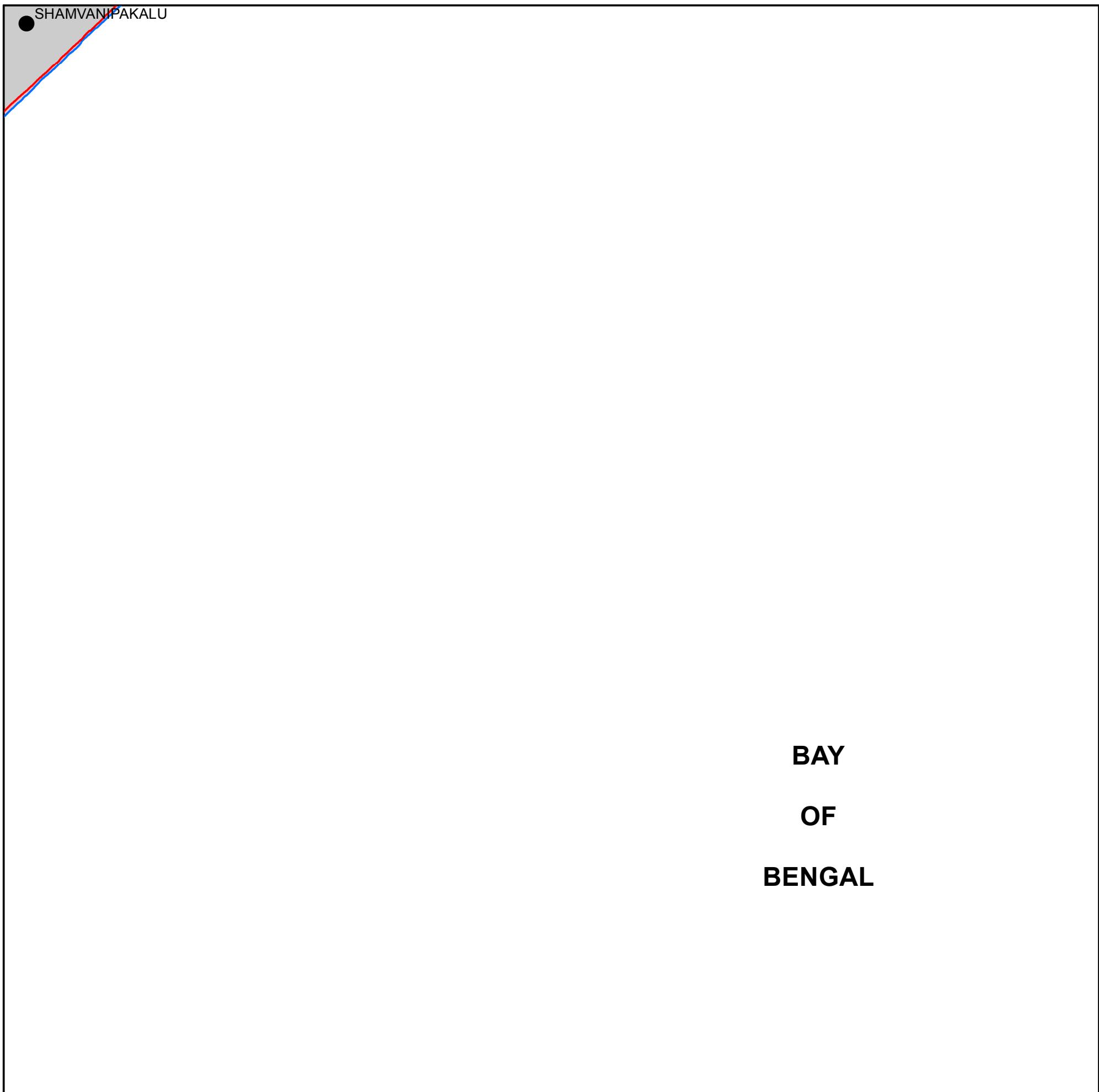
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K08SE



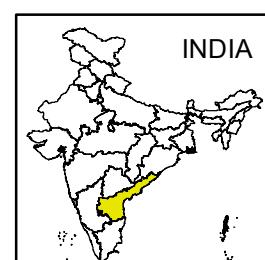
## Legend

- EROSION (Red Box)
- HIGH-TIDE LINE 2014-16 (Green Line)
- HIGH-TIDE LINE 2004-06 (Blue Line)
- HABITATION (Black Dot)



0 2 km

INDEX TO SHEETS		
65K08NW	65K08NE	65K12NW
65K08SW	65K08SE	SEA
65L05NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



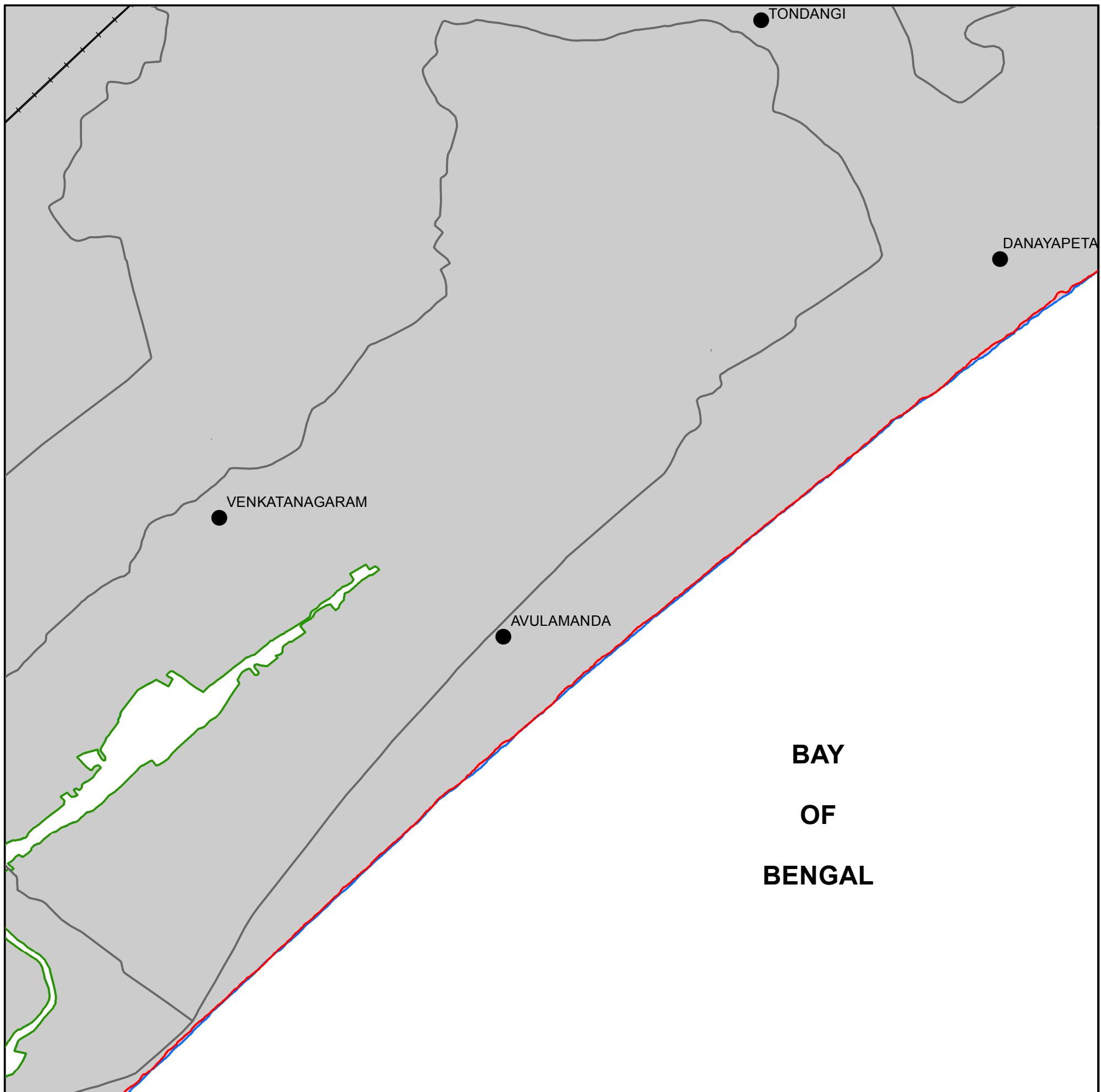
# SHORELINE CHANGE MAP

EAST GODAVARI DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K08NE



## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65K07SW	65K07SE	65K11SW
65K08NW	65K08NE	65K12NW
65K08SW	65K08SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



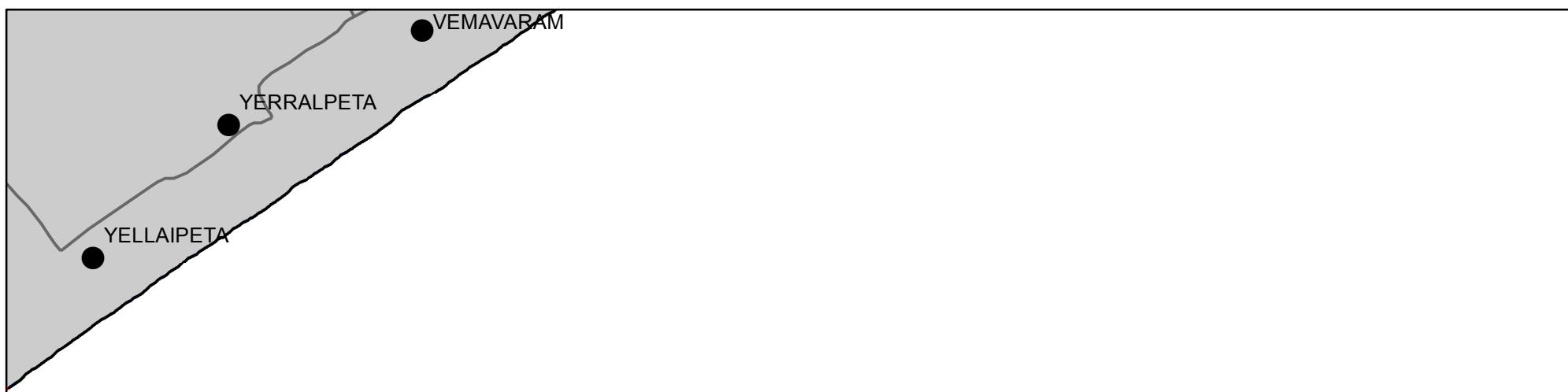
# SHORELINE CHANGE MAP

EAST GODAVARI  
VISAKHAPATTNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K12NW



BAY  
OF  
BENGAL

## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION

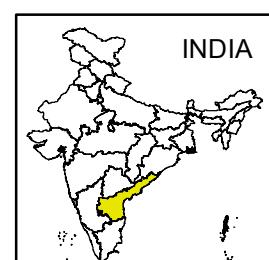


0

2 km

## INDEX TO SHEETS

65K07SE	65K11SW	65K11SE
65K08NE	65K12NW	SEA
65K08SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

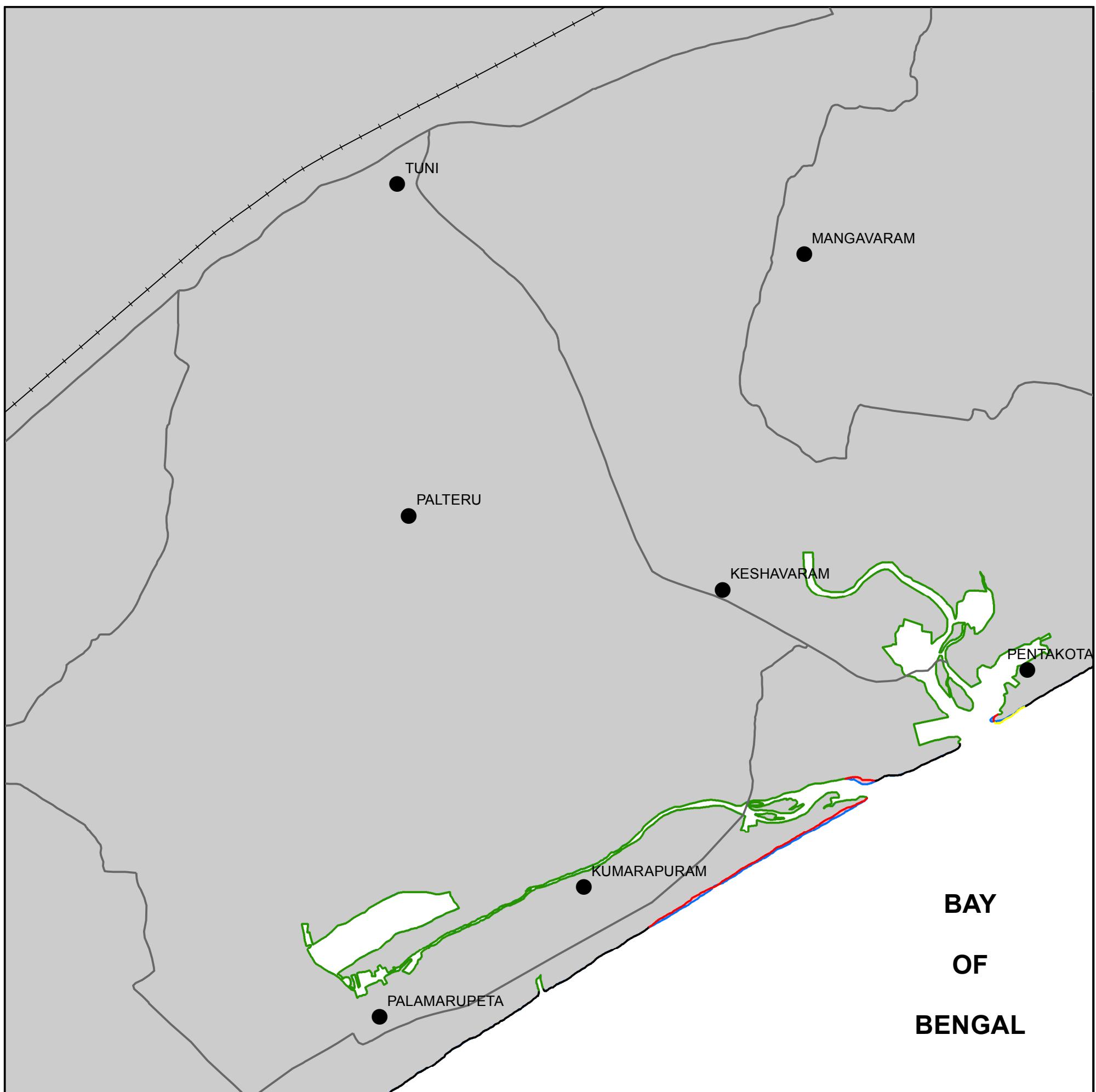


# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K11SW



## Legend

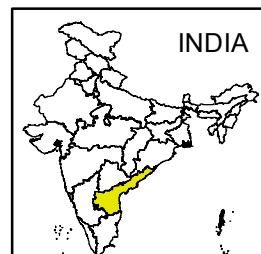
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

## INDEX TO SHEETS

65K07NE	65K11NW	65K11NE
65K07SE	65K11SW	65K11SE
65K08NE	65K12NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

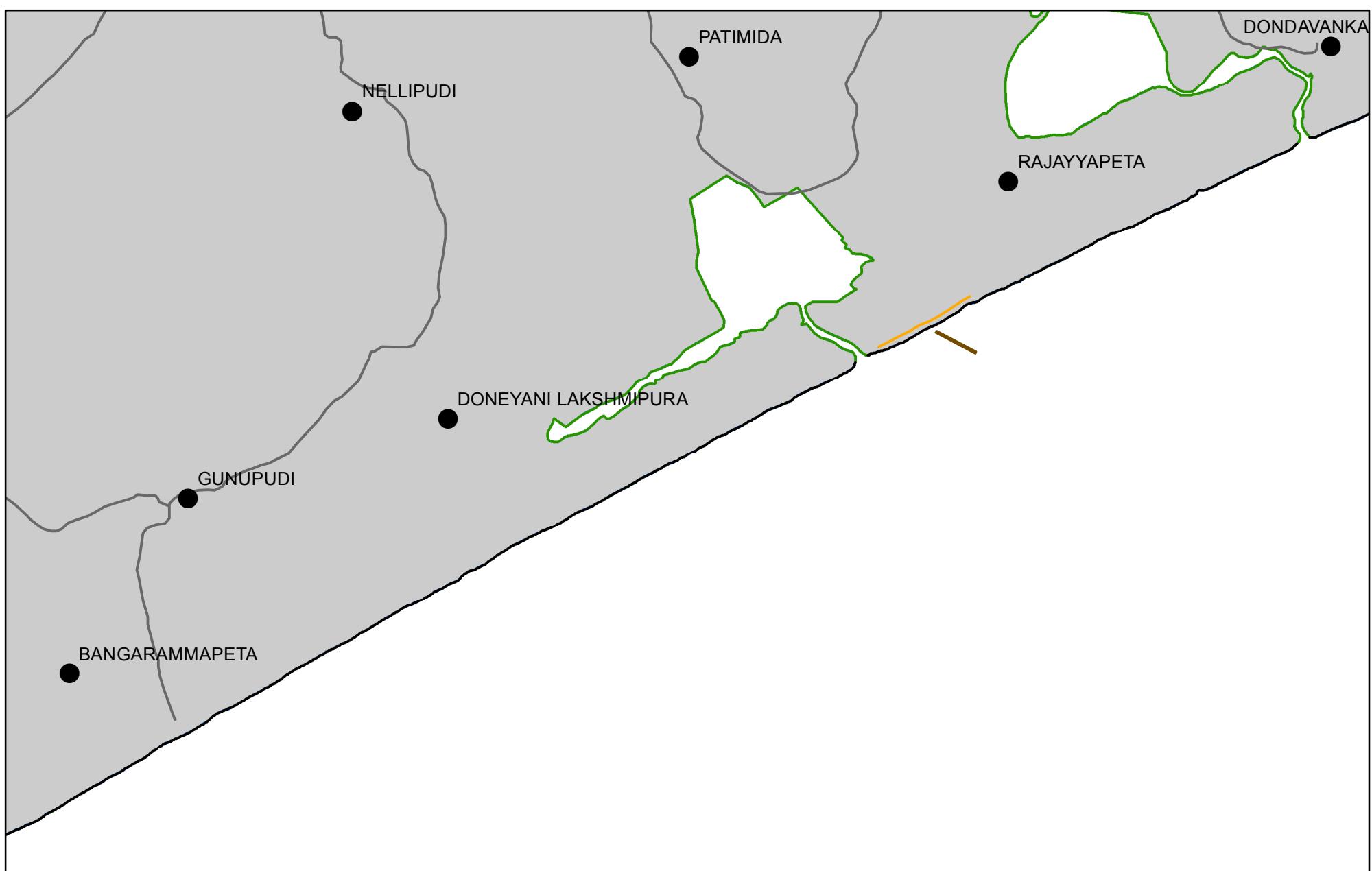


# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

VISHAKHAPATNAM DISTRICT ANDHRA PRADESH

SHEET NO. 65K11SE



BAY  
OF  
BENGAL

## Legend

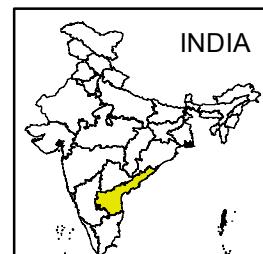
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

65K11NW	65K11NE	65K15NW
65K11SW	65K11SE	65K15SW
65K12NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

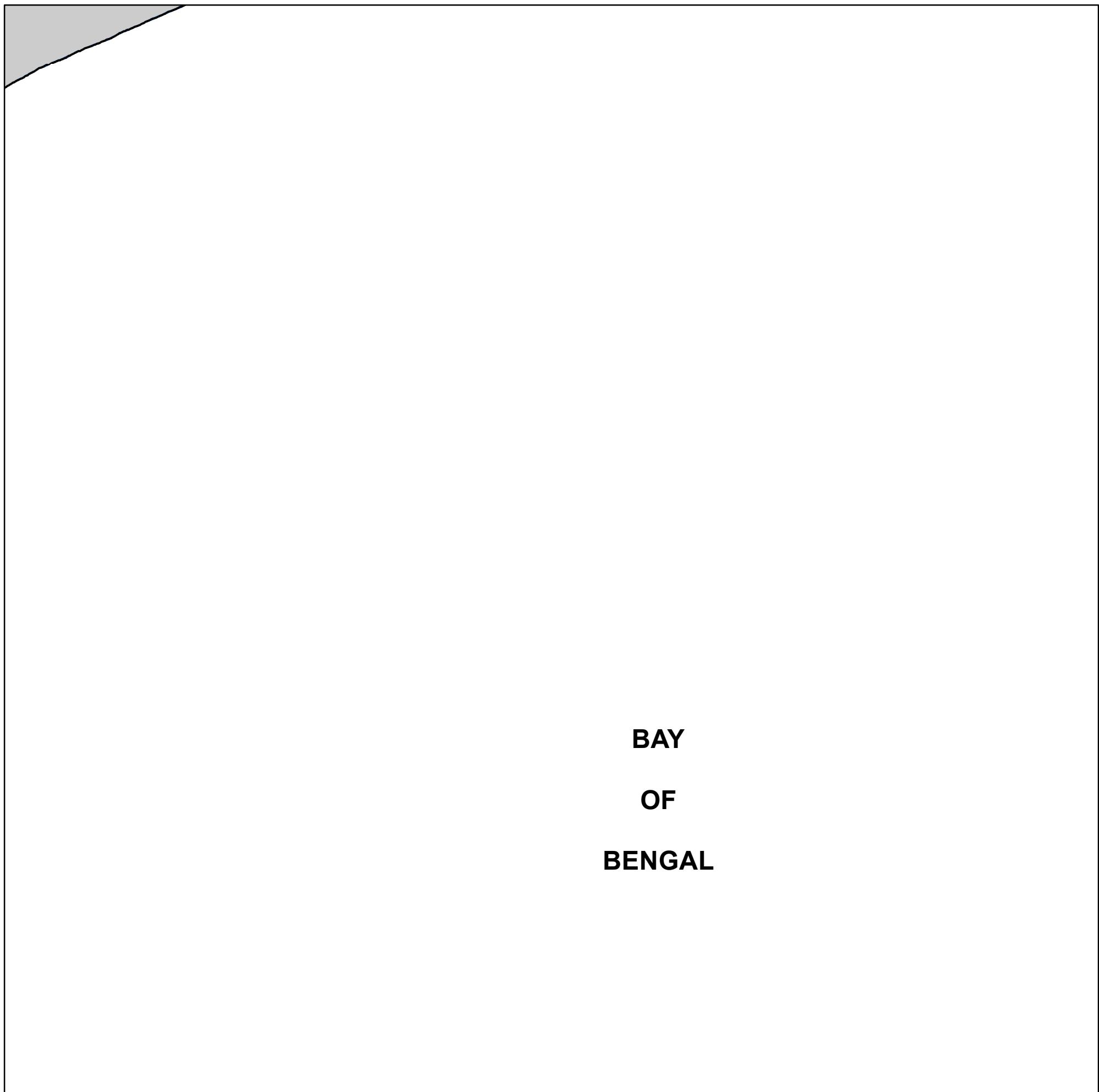


# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K15SW



BAY

OF

BENGAL

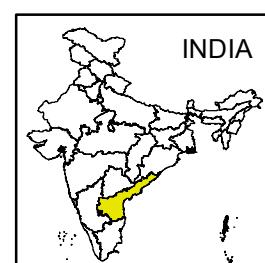
## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km

INDEX TO SHEETS		
65K11NE	65K15NW	65K15NE
65K11SE	65K15SW	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



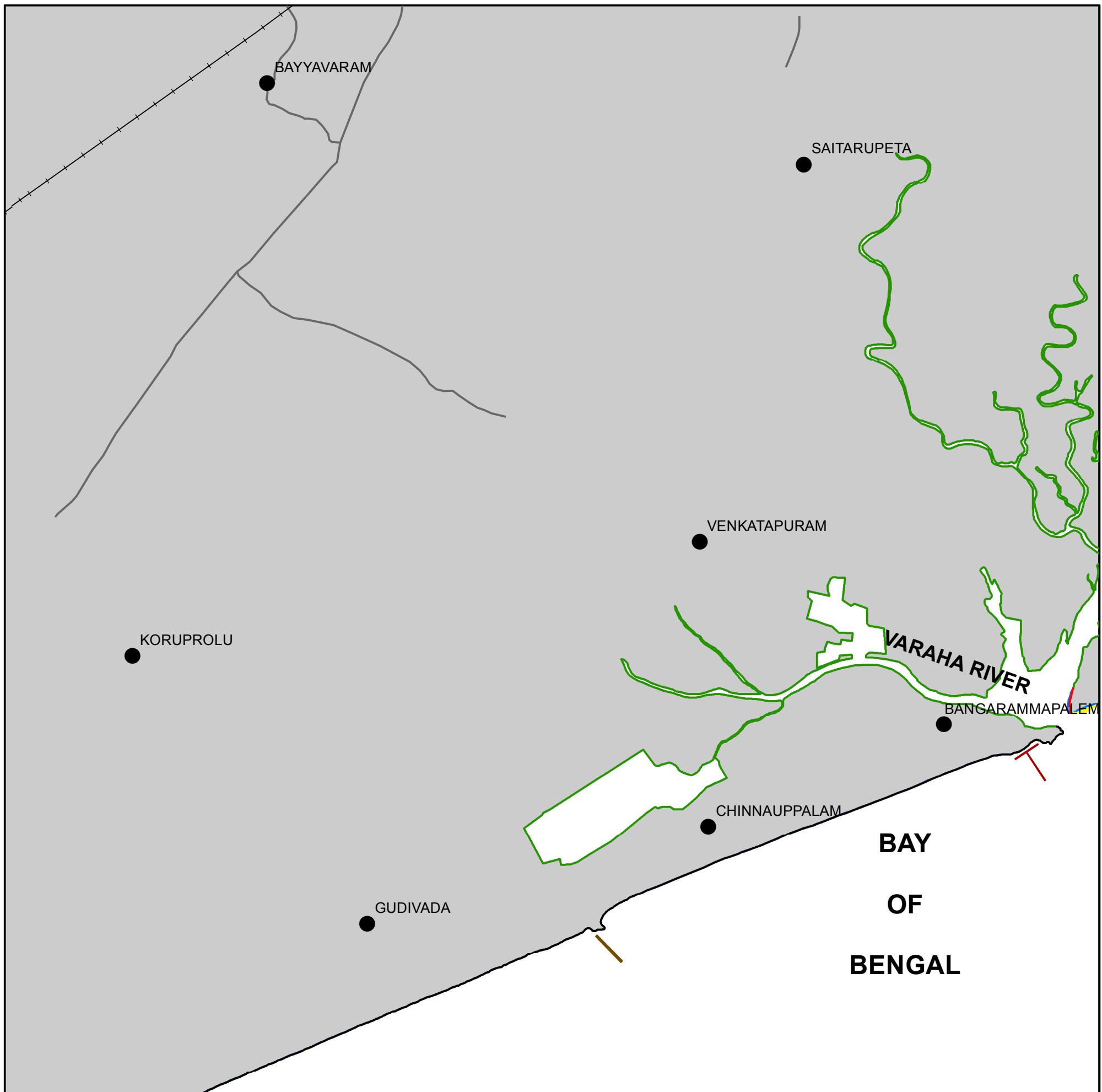
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K15NW



## Legend

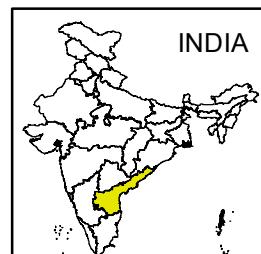
- [Red Box] EROSION
- [Yellow Box] ACCRETION
- [Green Line] HIGH-TIDE LINE 2014-16
- [Blue Line] HIGH-TIDE LINE 2004-06
- [Black Line] STABLE
- [Grey Line] ROAD
- [Dashed Line] RAILWAY
- [Red T-junction] BREAKWATER
- [Brown Line] JETTY
- [Black Dot] HABITATION



0 2 km

## INDEX TO SHEETS

65K10SE	65K14SW	65K14SE
65K11NE	65K15NW	65K15NE
65K11SE	65K15SW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

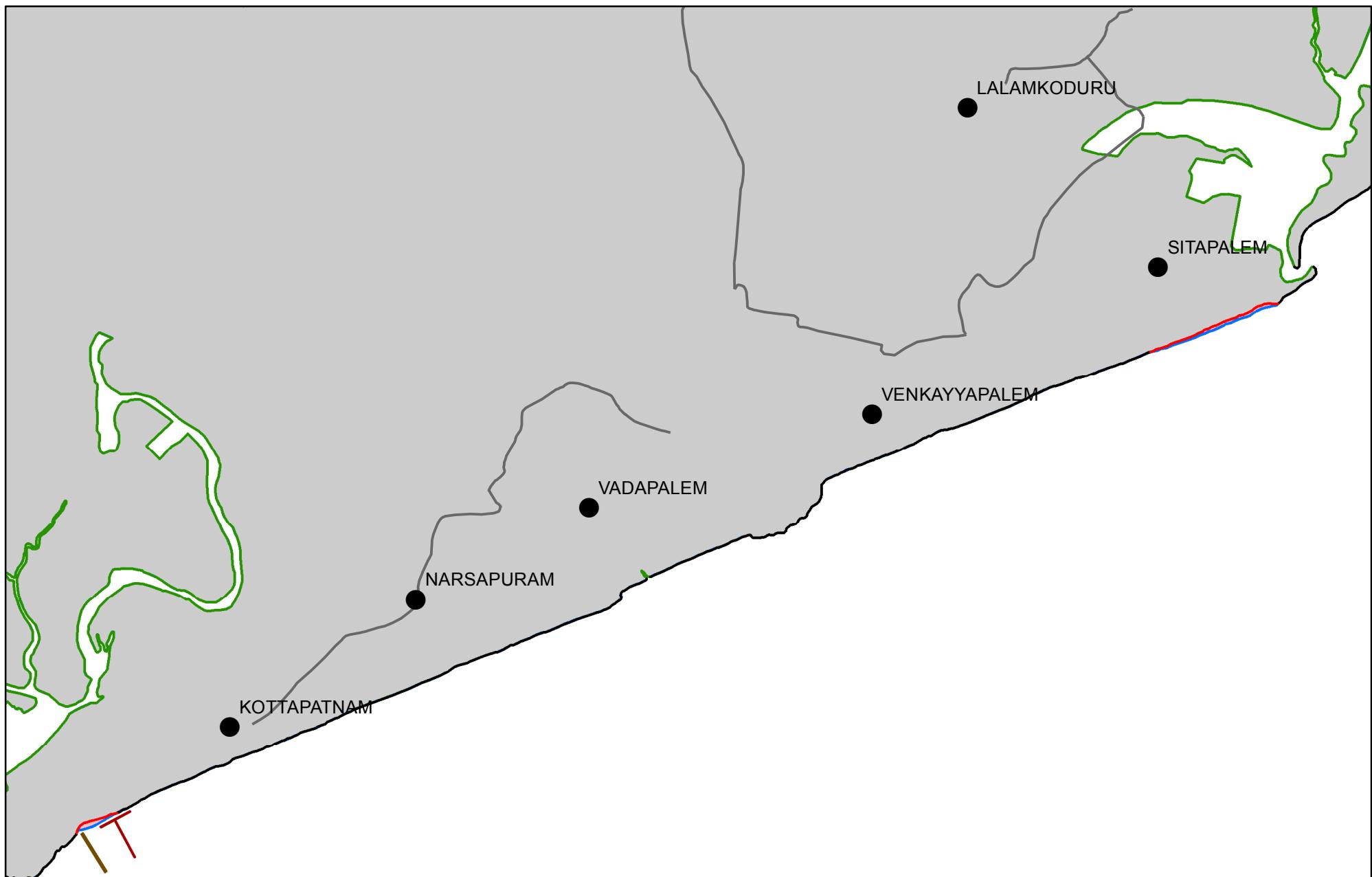


# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65K15NE



BAY  
OF  
BENGAL

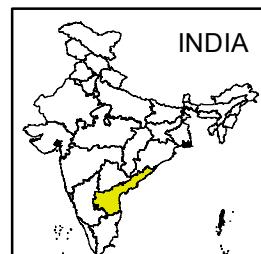
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- BREAKWATER
- JETTY
- HABITATION



0 2 km

INDEX TO SHEETS		
65K14SW	65K14SE	65002SW
65K15NW	65K15NE	65003NW
65K15SW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



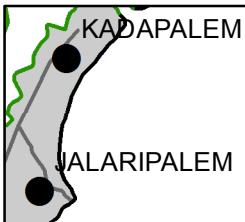
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65O03NW



BAY

OF

BENGAL

## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION

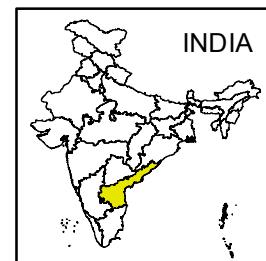


0

2 km

## INDEX TO SHEETS

65K14SE	65002SW	65002SE
65K15NE	65003NW	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



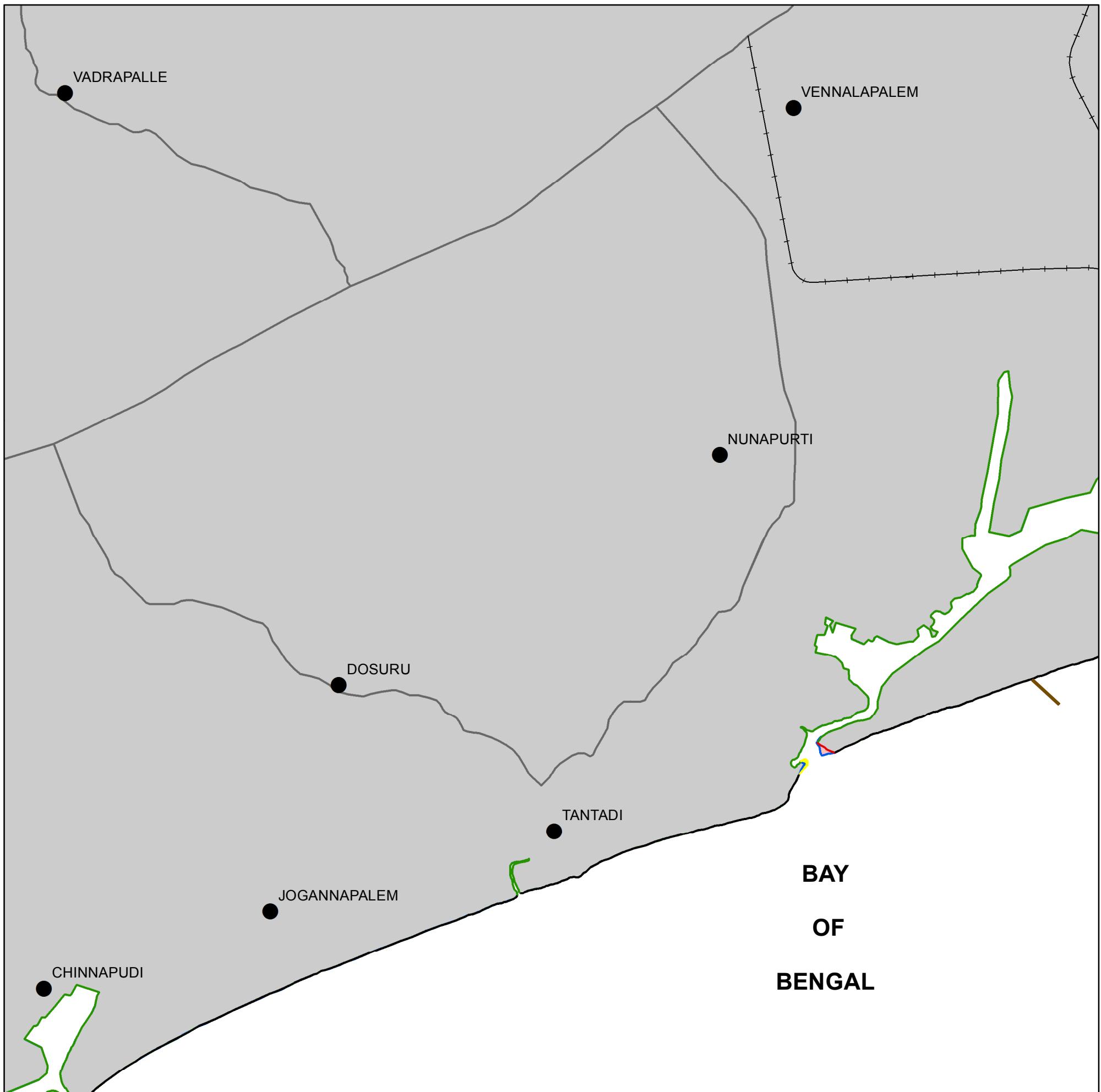
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65002SW



## Legend

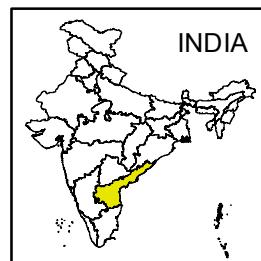
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- JETTY
- HABITATION



0 2 km

## INDEX TO SHEETS

65K14NE	65002NW	65002NE
65K14SE	65002SW	65002SE
65K15NE	65003NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI

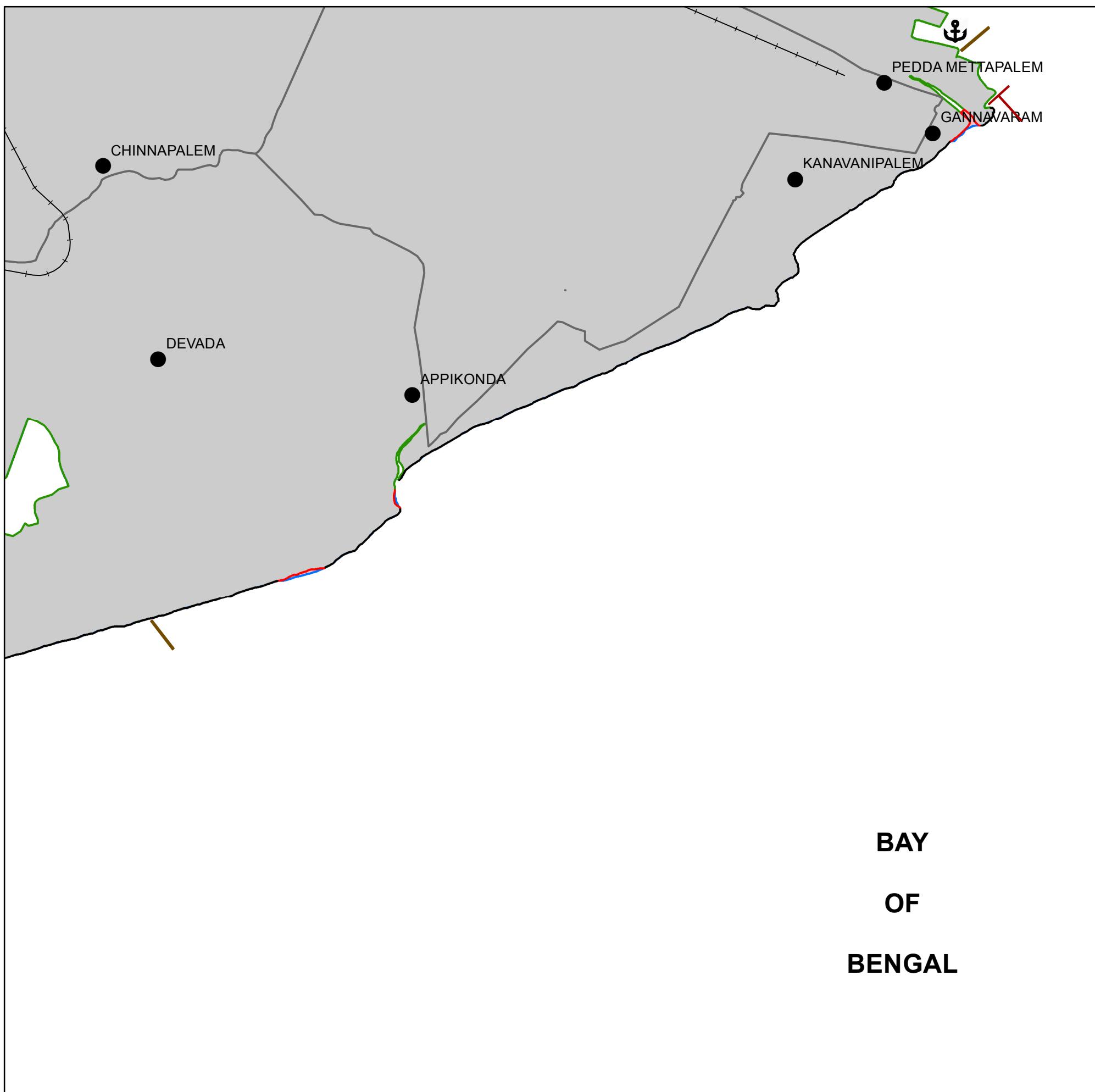


# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65002SE



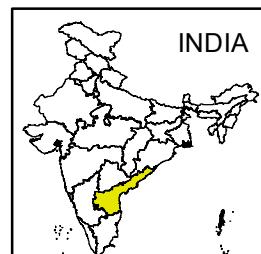
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- BREAKWATER
- JETTY
- PORT/HARBOUR
- HABITATION



0 2 km

INDEX TO SHEETS		
65002NW	65002NE	65006NW
65002SW	65002SE	SEA
65003NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



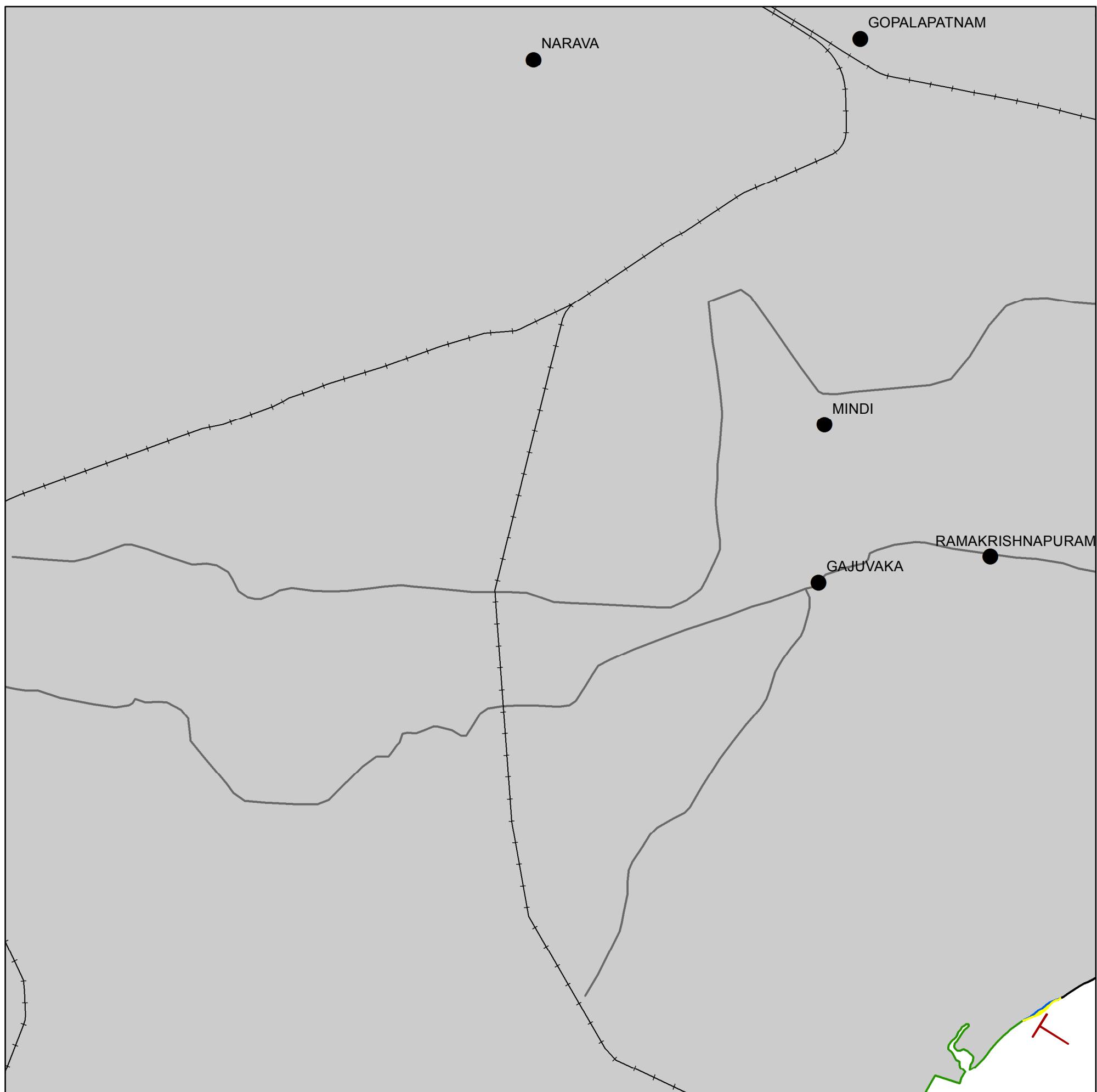
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65O02NE



## Legend

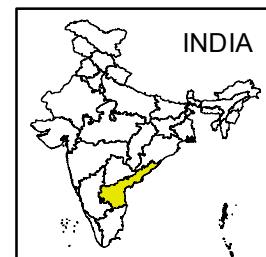
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE ROAD
- RAILWAY
- BREAKWATER
- HABITATION



0 2 km

## INDEX TO SHEETS

65001SW	65001SE	65005SW
65002NW	65002NE	65006NW
65002SW	65002SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



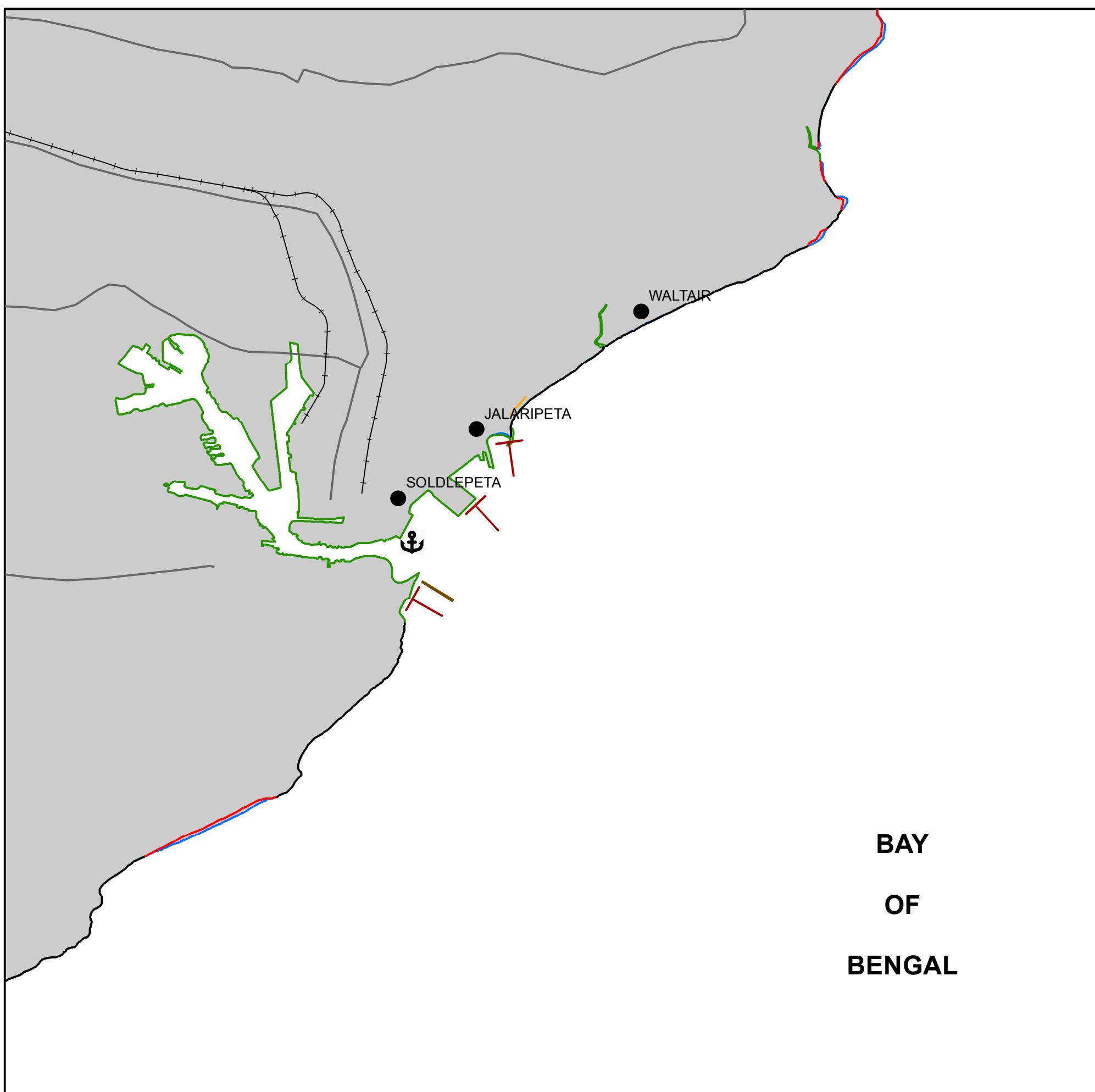
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

VISHAKHAPATNAM DISTRICT

**ANDHRA PRADESH**

SHEET NO. 65006NW



## Legend

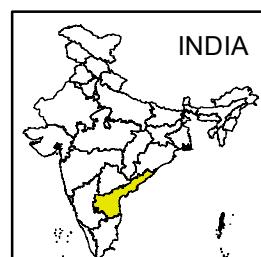
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- SEA WALL
- BREAKWATER
- JETTY
- ANCHOR PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

65001SE	65005SW	65005SE
65002NE	65006NW	SEA
65002SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



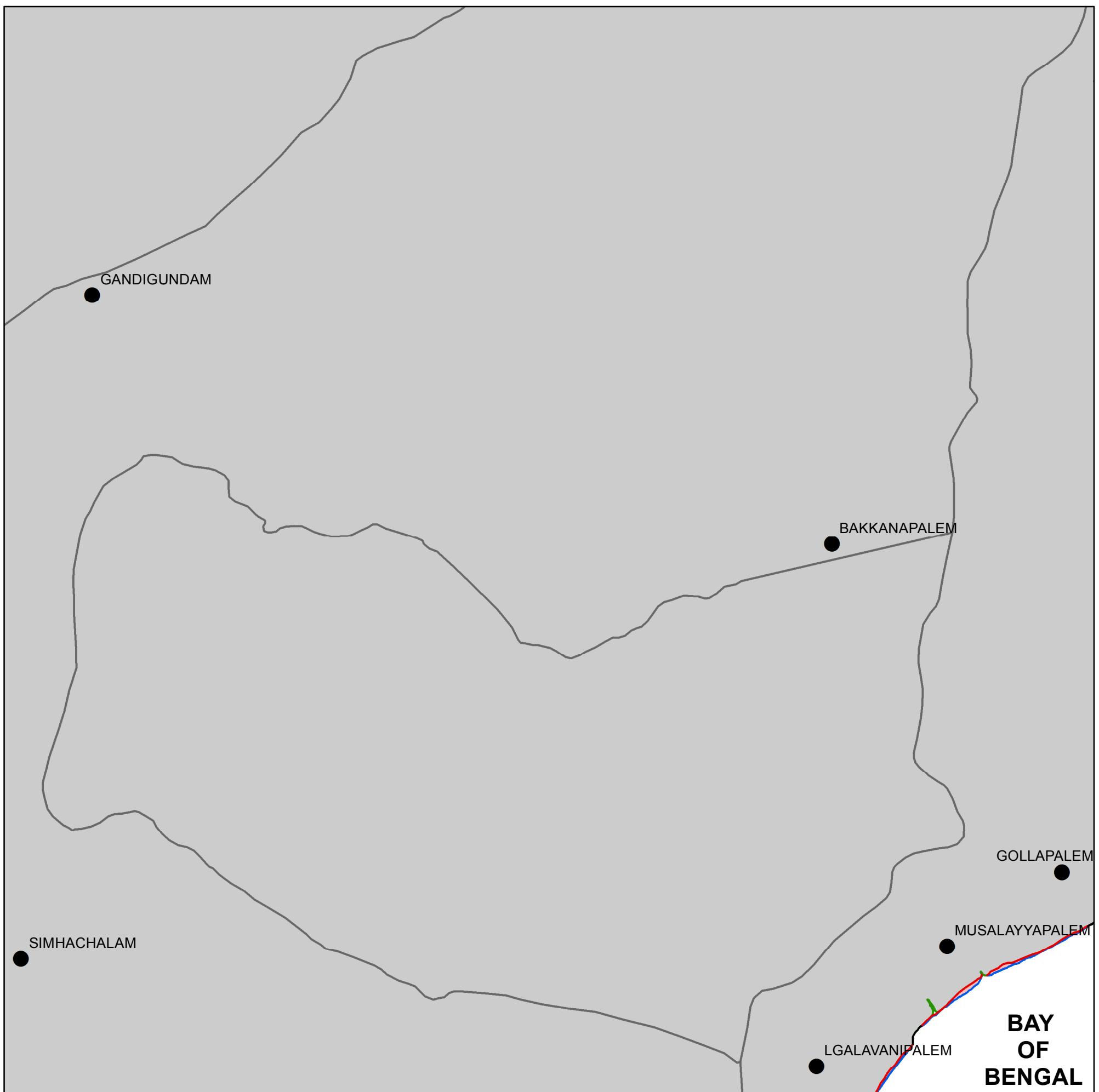
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65005SW



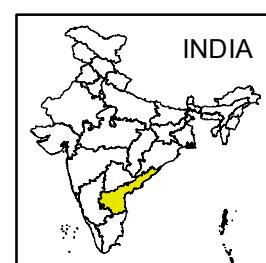
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

65001NE	65005NW	65005NE
65001SE	65005SW	65005SE
65002NE	65006NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



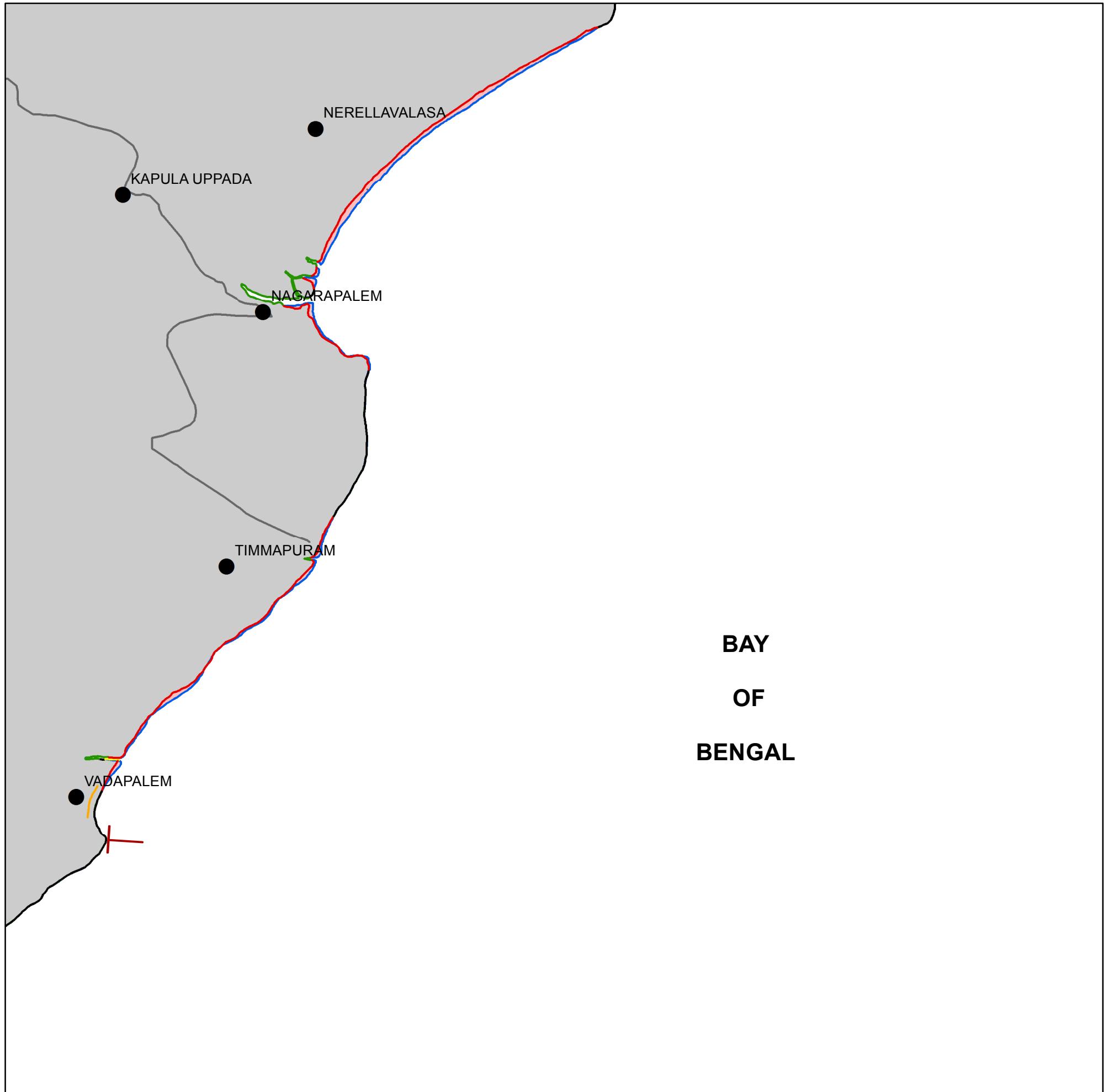
# SHORELINE CHANGE MAP

VISHAKHAPATNAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65005SE



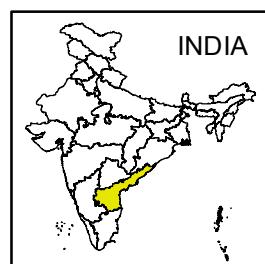
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- BREAKWATER
- HABITATION



0 2 km

65005NW	65005NE	65009NW
65005SW	65005SE	SEA
65006NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



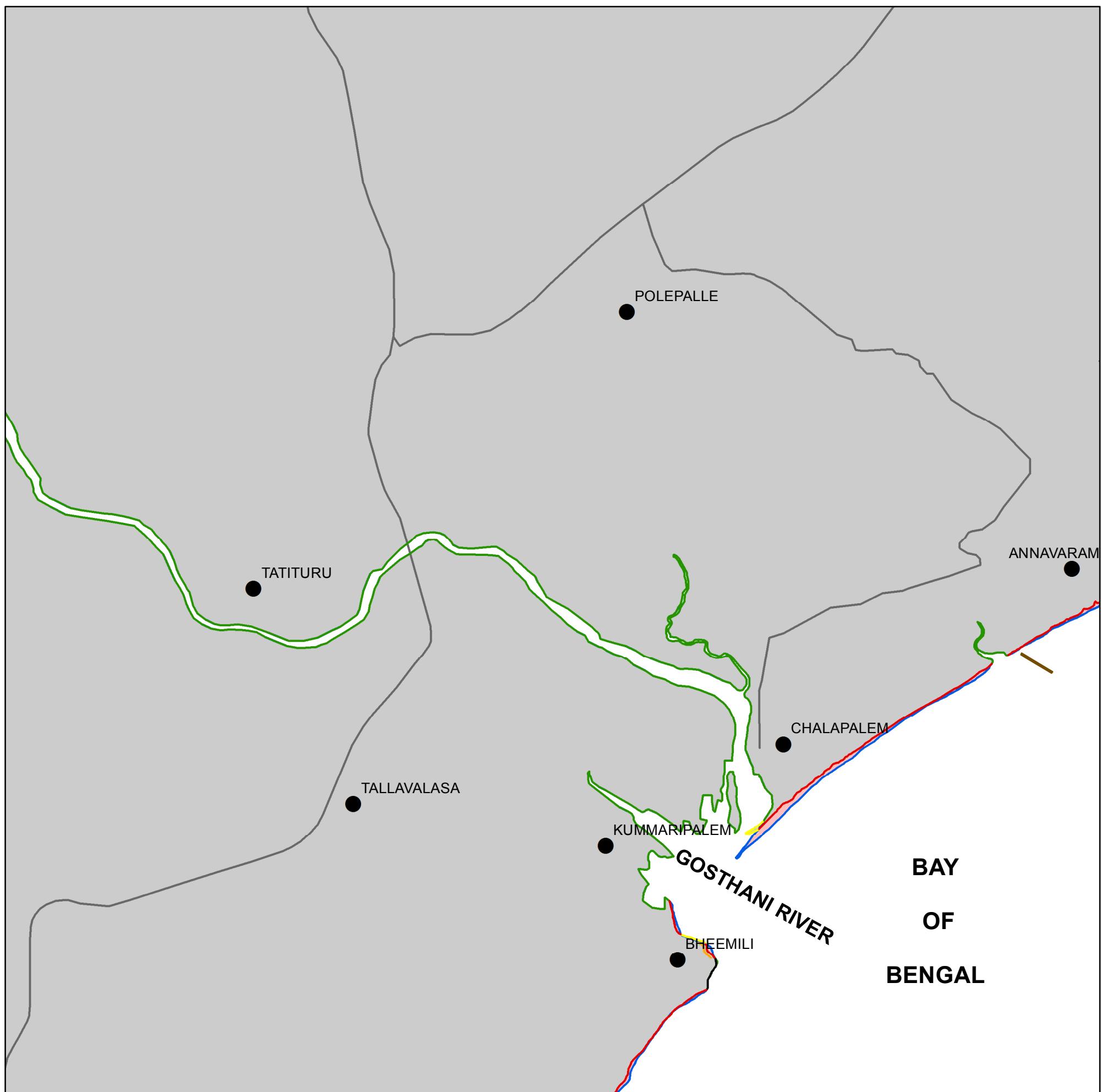
# SHORELINE CHANGE MAP

VISHAKHAPATNAM  
VIZIANAGARAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65O05NE



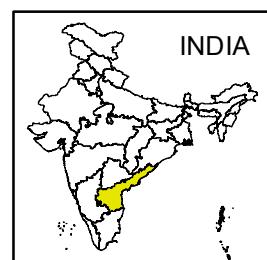
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- JETTY
- HABITATION



0 2 km

65N08SW	65N08SE	65N12SW
65O05NW	65O05NE	65O09NW
65O05SW	65O05SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



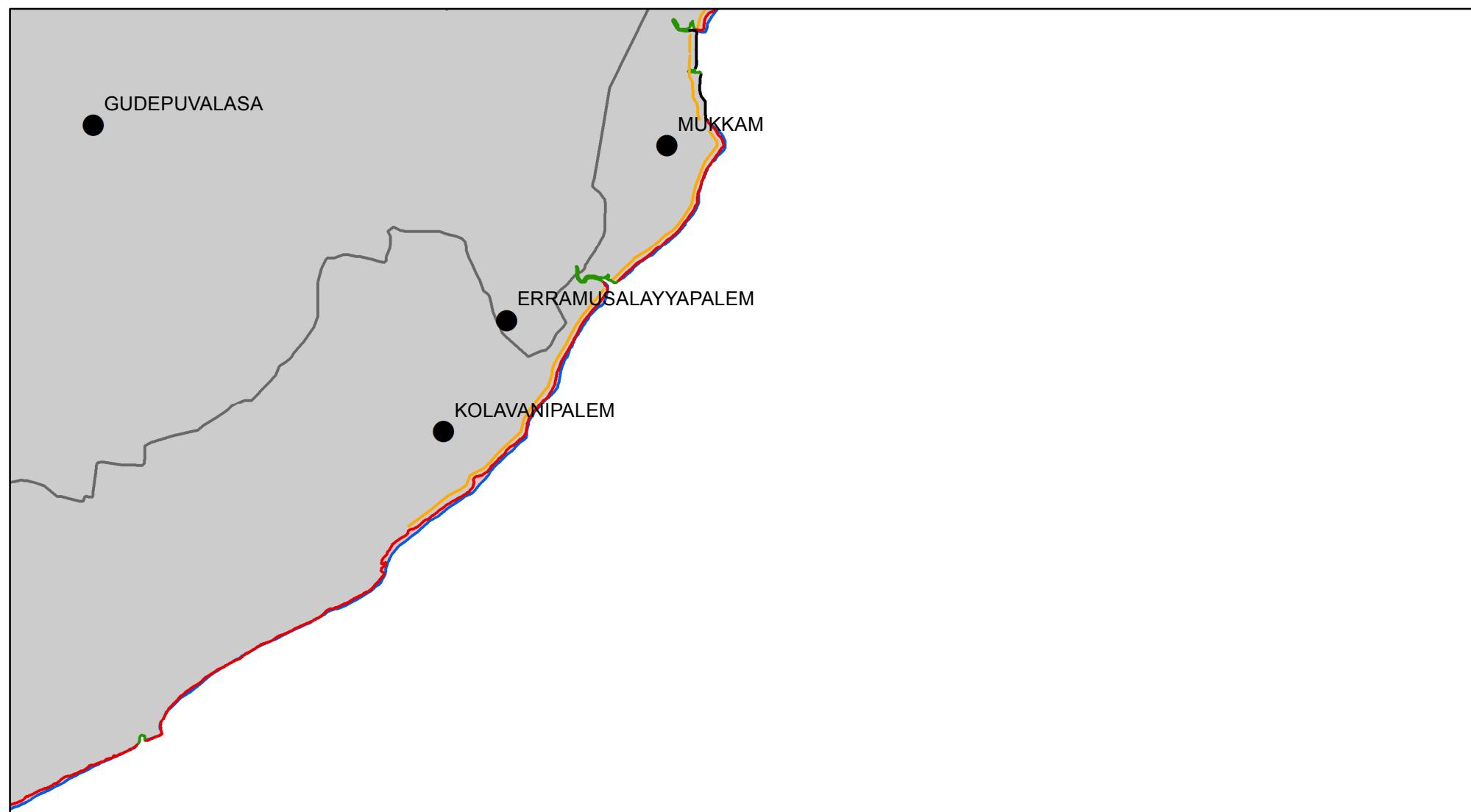
# SHORELINE CHANGE MAP

VIZIANAGARAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65O09NW



BAY

OF

BENGAL

## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- HABITATION

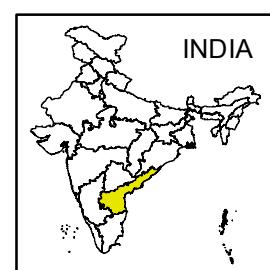


0

2 km

## INDEX TO SHEETS

65N08SE	65N12SW	65N12SE
65O05NE	65O09NW	SEA
65O05SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



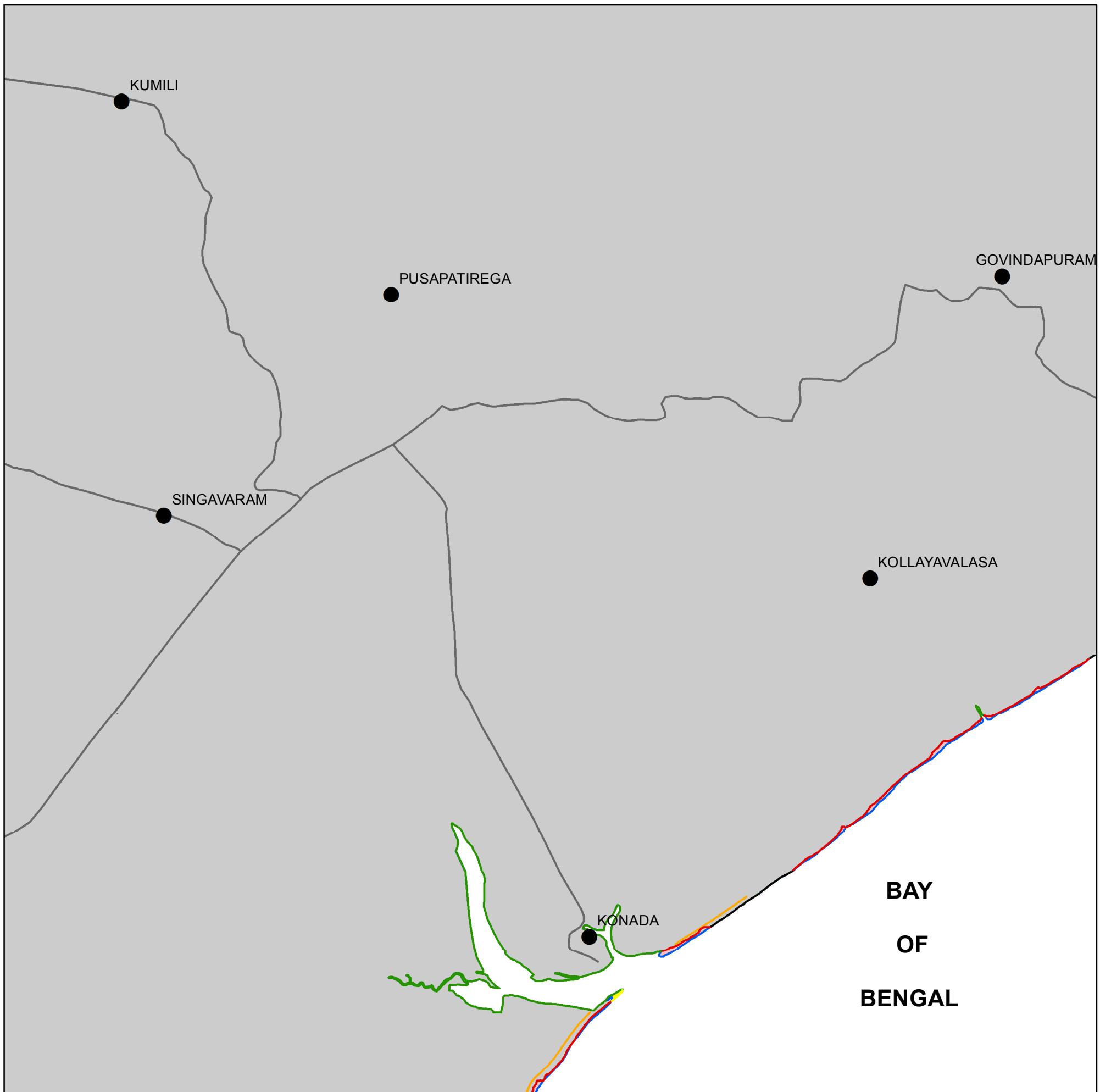
# SHORELINE CHANGE MAP

VIZIANAGARAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65N12SW



## Legend

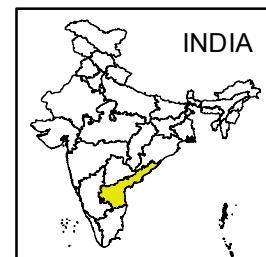
- ACCRETION
- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- SEA WALL
- HABITATION



0 2 km

## INDEX TO SHEETS

65N08NE	65N12NW	65N12NE
65N08SE	65N12SW	65N12SE
65005NE	65009NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



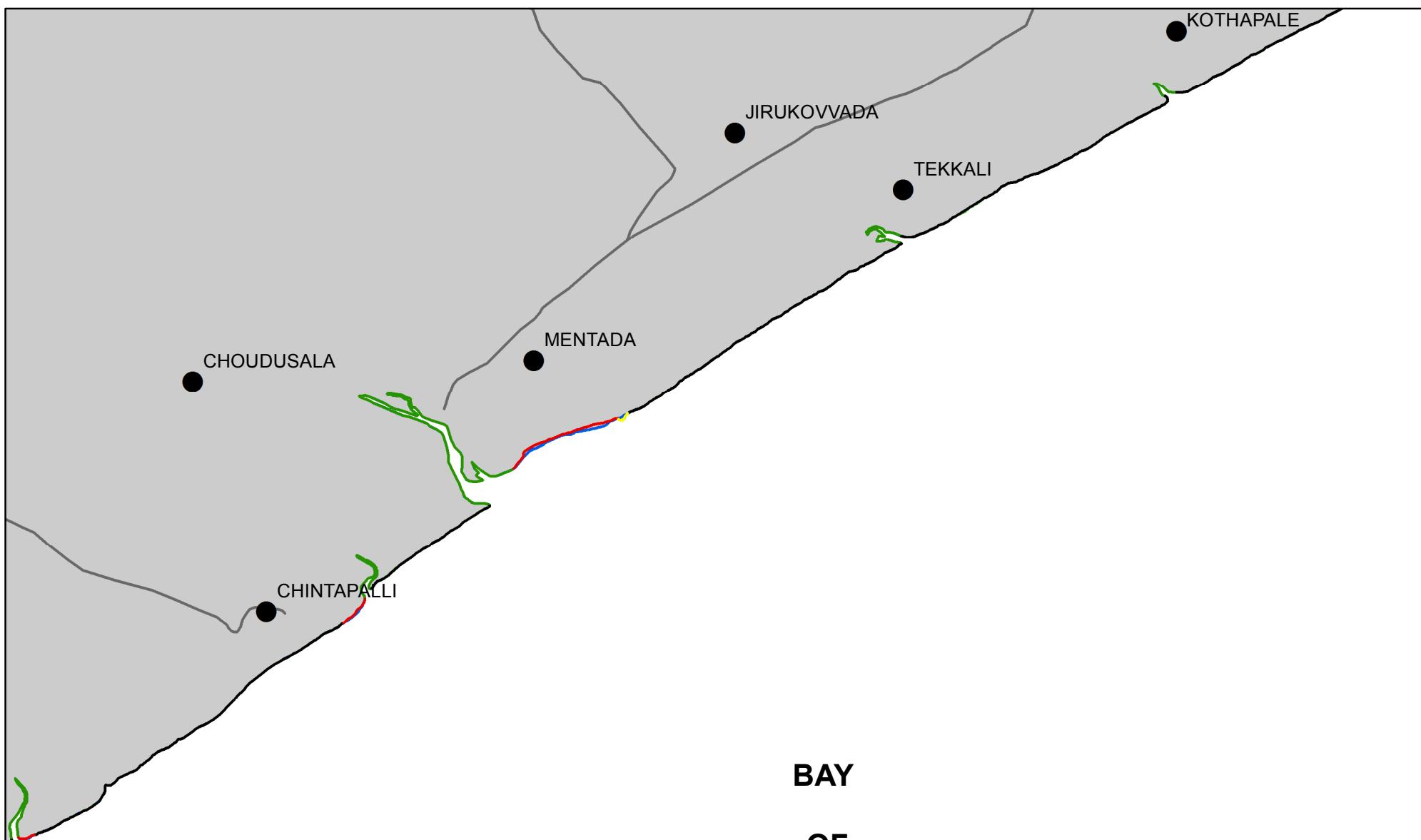
# SHORELINE CHANGE MAP

VIZIANAGARAM  
SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65N12SE



BAY  
OF  
BENGAL

## Legend

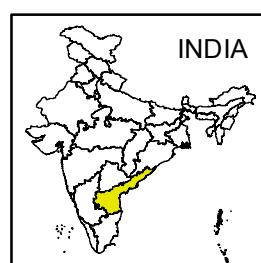
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

## INDEX TO SHEETS

65N12NW	65N12NE	65N12NW
65N12SW	65N12SE	SEA
65O09NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



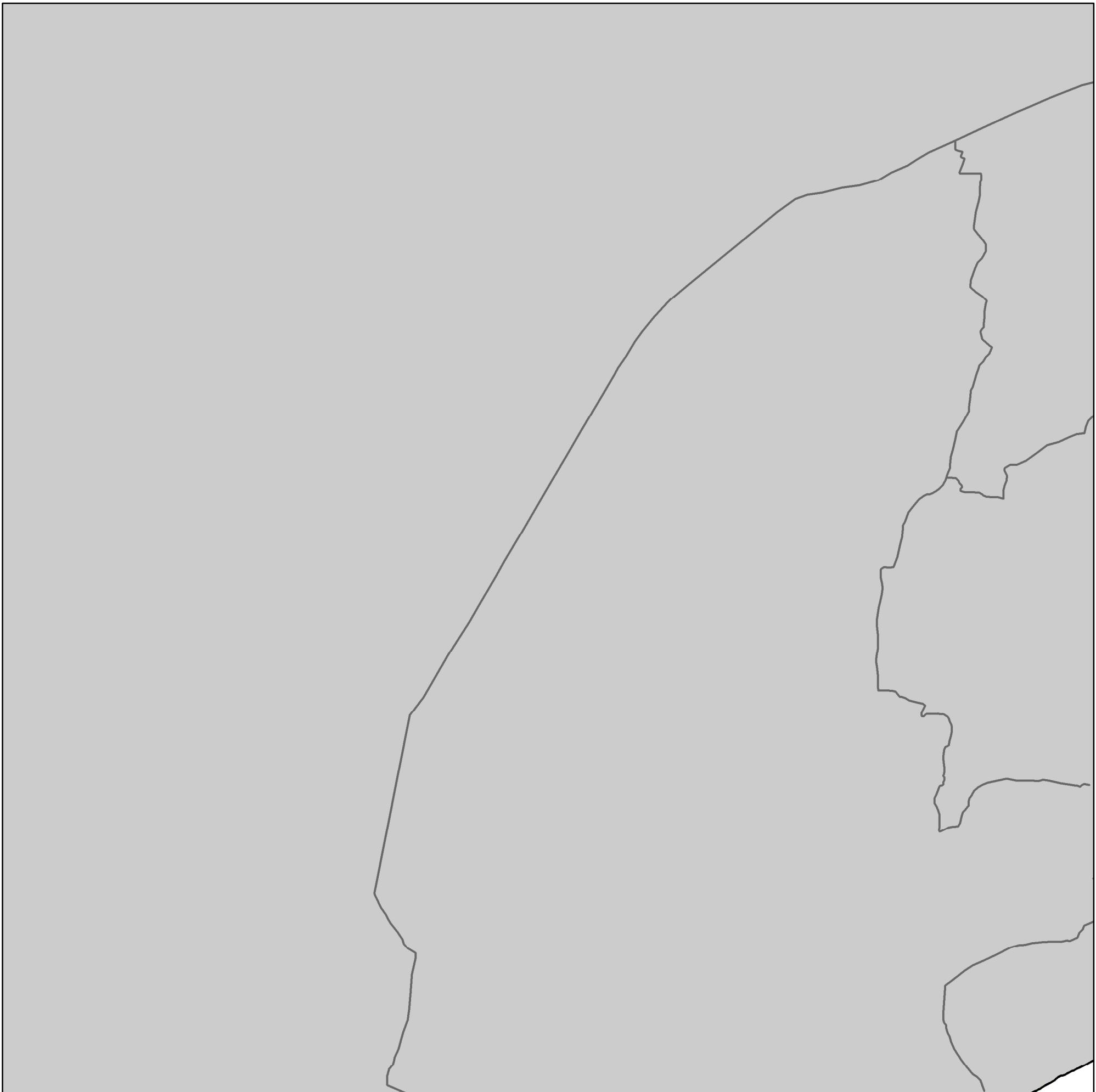
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 65N12NE



## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD

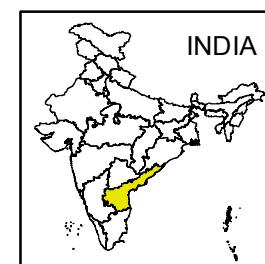


0

2 km

## INDEX TO SHEETS

65N11SW	65N11SE	65N11SSW
65N12NW	65N12NE	65N16NW
65N12SW	65N12SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



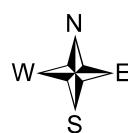
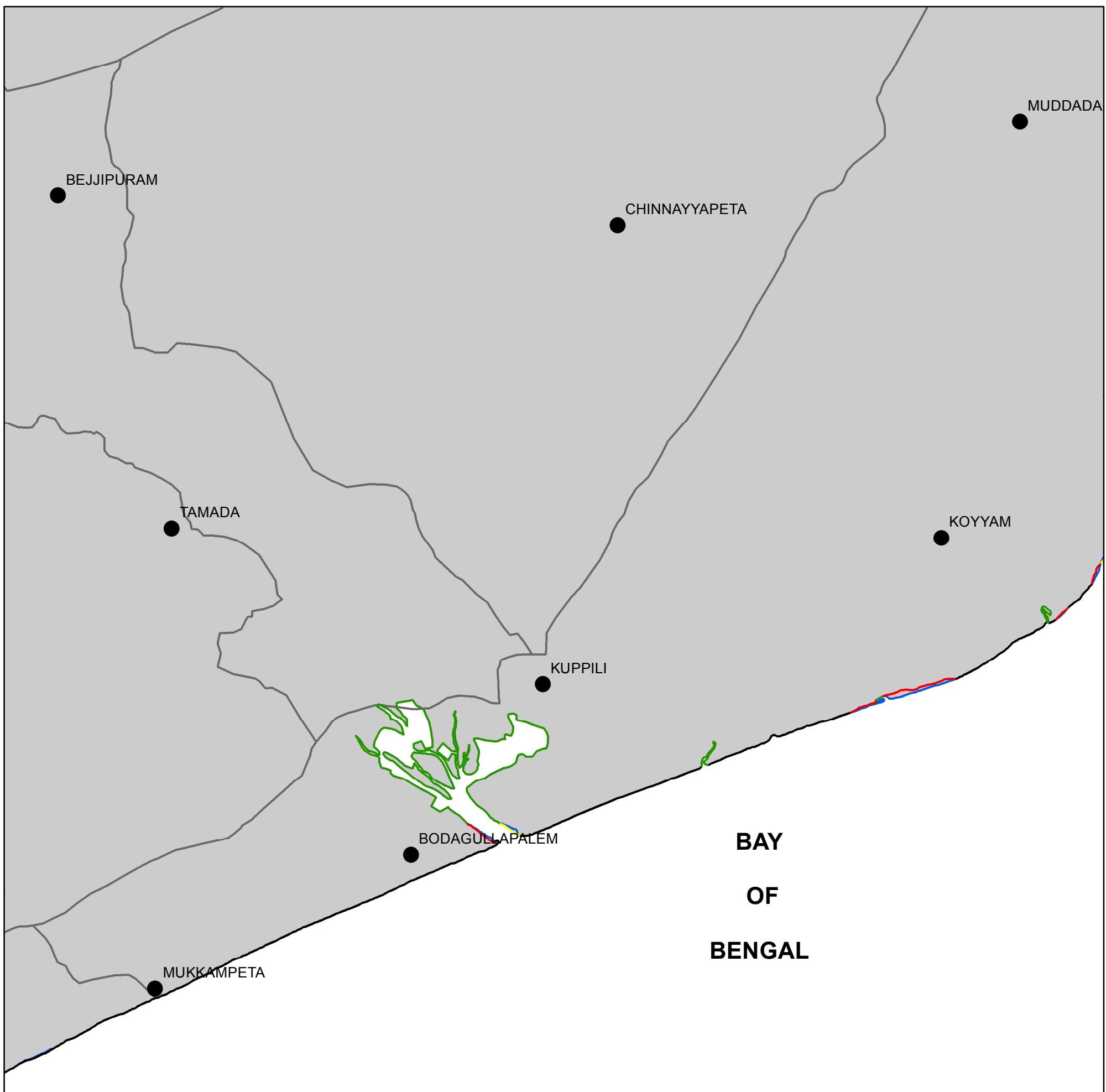
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

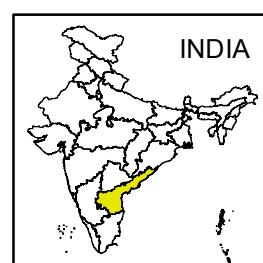
FOR OFFICIAL USE ONLY

SHEET NO. 65N16NW



0 2 km

65N11SE	65N15SW	65N15SE
65N12NE	65N16NW	65N16NE
65N12SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



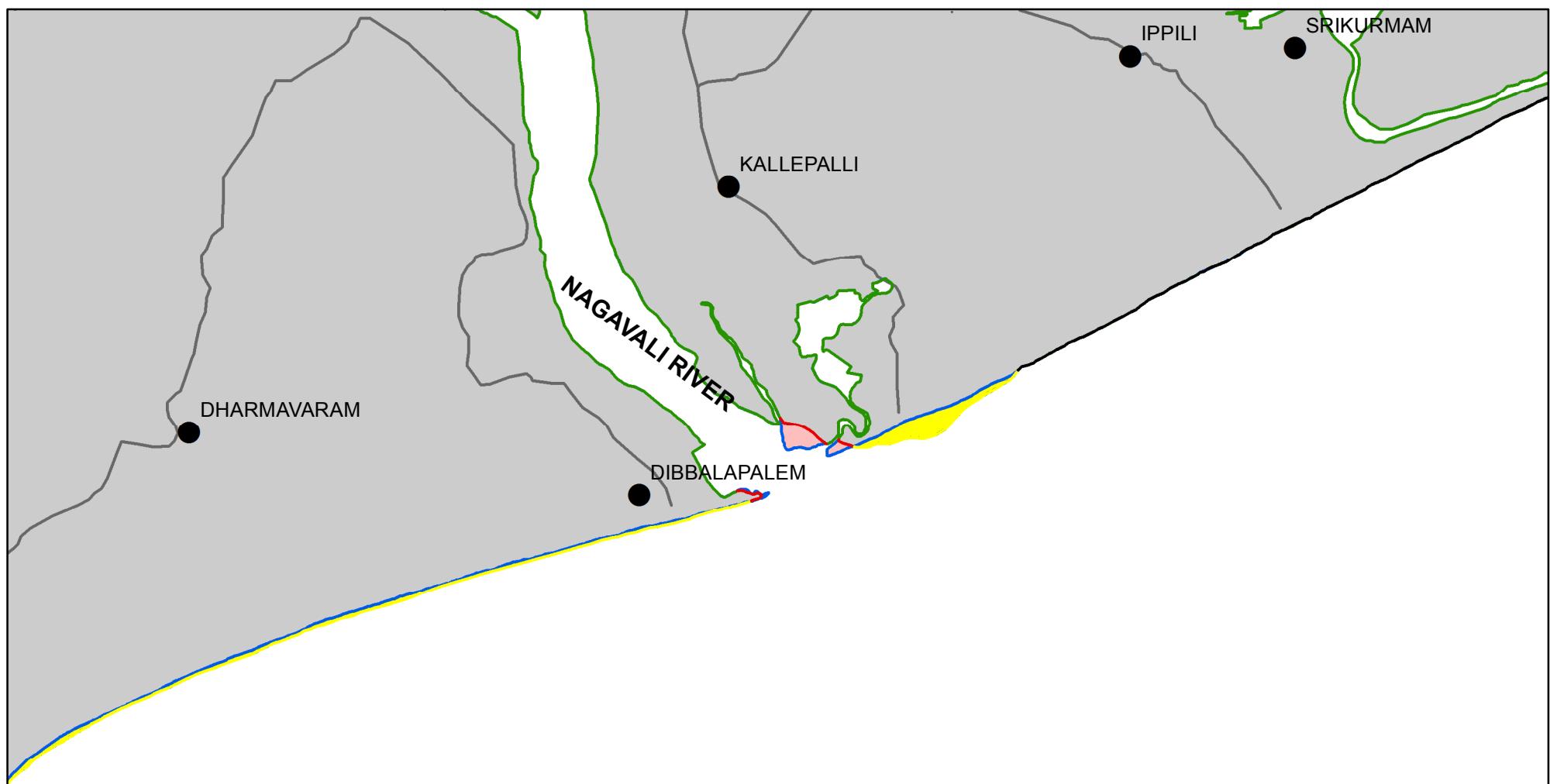
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

SRIKAKULAM DISTRICT

ANDHRA PRADESH

SHEET NO. 65N16NE



BAY

OF

BENGAL

## Legend

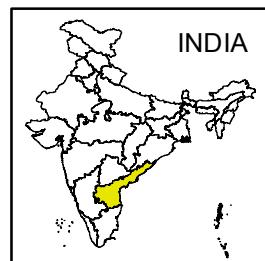
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0

2 km

65N15SW	65N15SE	74B03SW
65N16NW	65N16NE	74B04NW
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B04NW



BAY  
OF  
BENGAL

## Legend

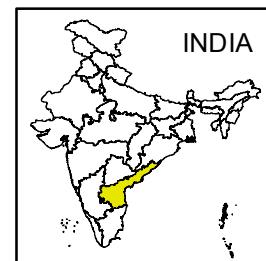
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0

2 km

65N15SE	74B03SW	74B03SE
65N16NE	74B04NW	SEA
SEA	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



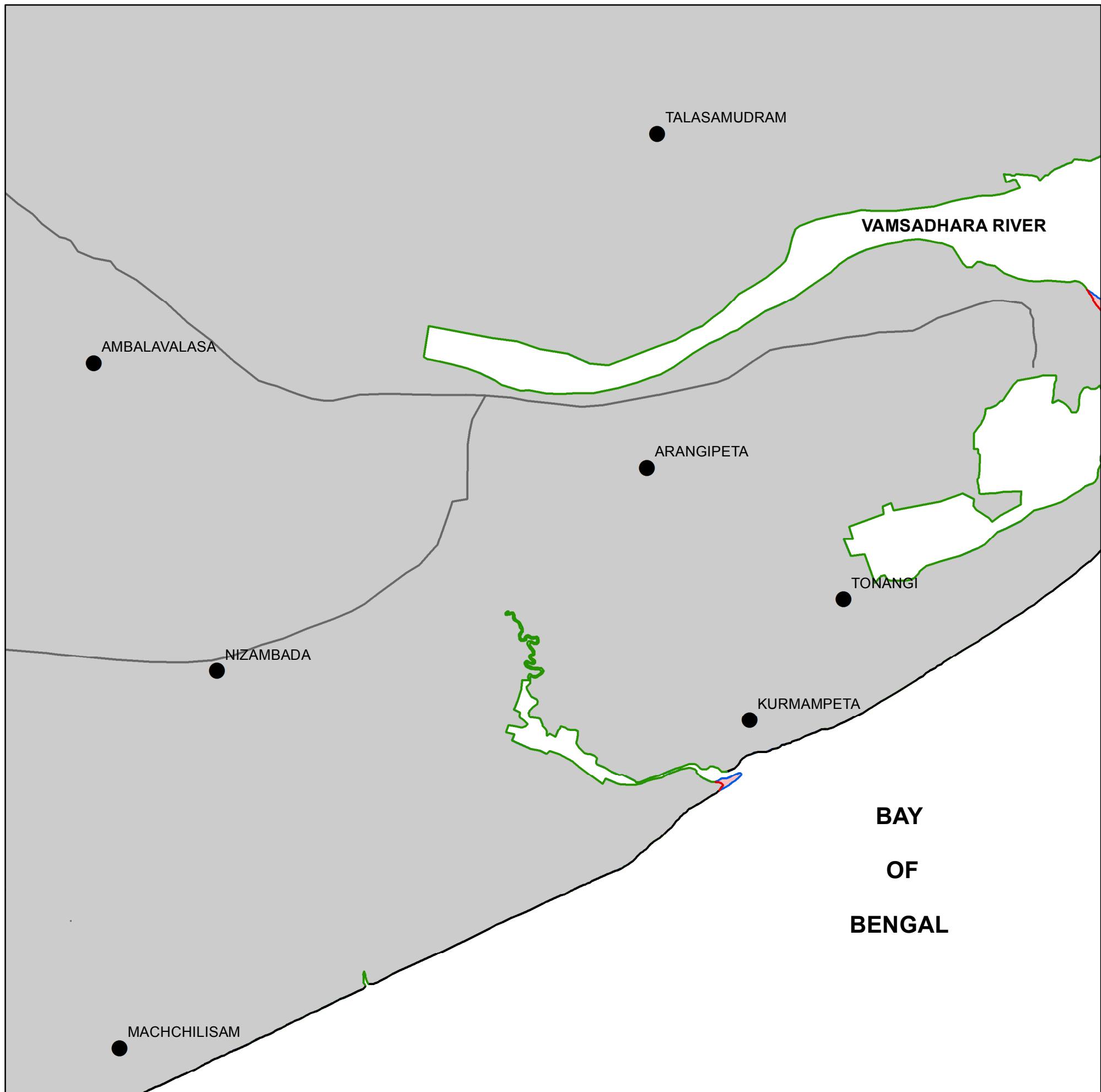
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B03SW



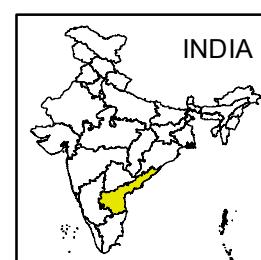
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

65N15NE	74B03NW	74B03NE
65N15SE	74B03SW	74B03SE
65N16NE	74B04NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



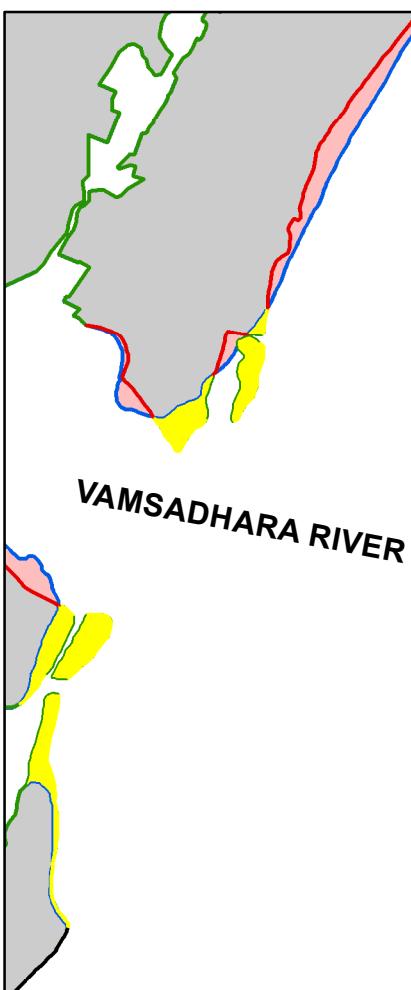
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B03SE



BAY  
OF  
BENGAL

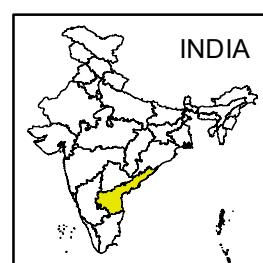
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0 2 km

INDEX TO SHEETS		
74B03NW	74B03NE	74B07NW
74B03SW	74B03SE	SEA
74B04NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



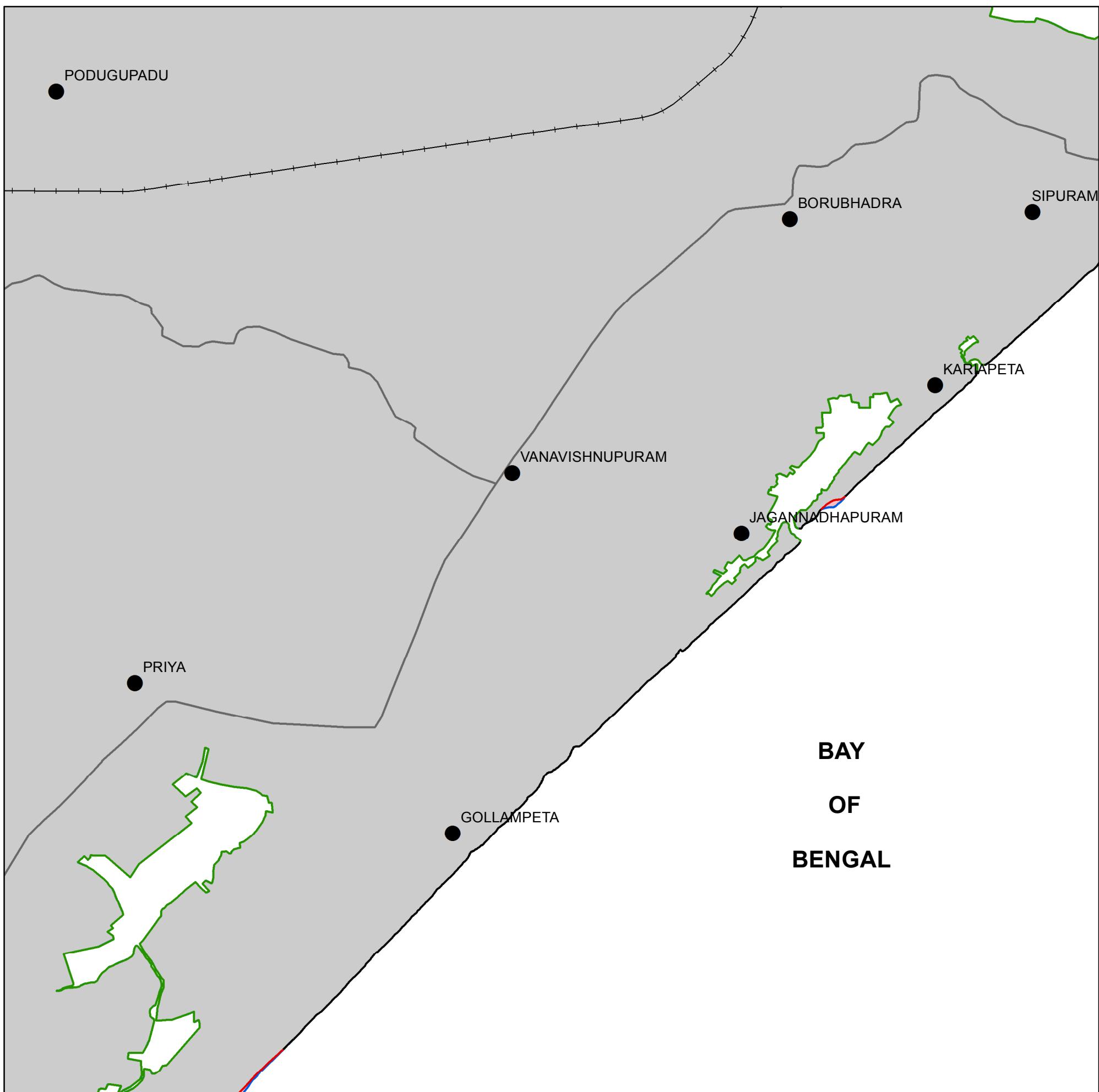
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B03NE



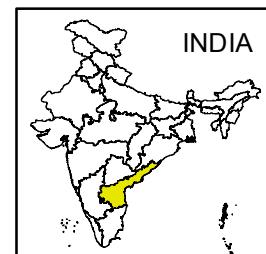
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

74B02SW	74B02SE	74B06SW
74B03NW	74B03NE	74B07NW
74B03SW	74B03SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



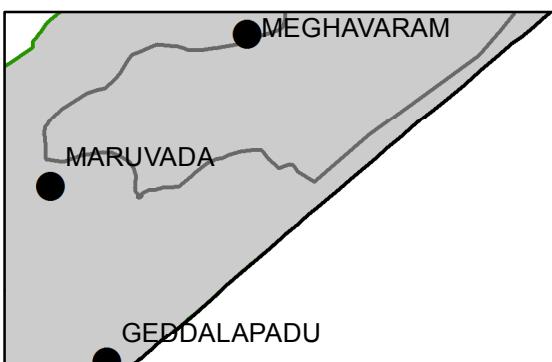
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B07NW



BAY  
OF  
BENGAL

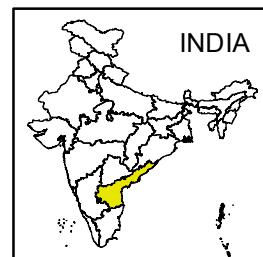
## Legend

- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

74B02SE	74B06SW	74B06SE
74B03NE	74B07NW	SEA
74B03SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



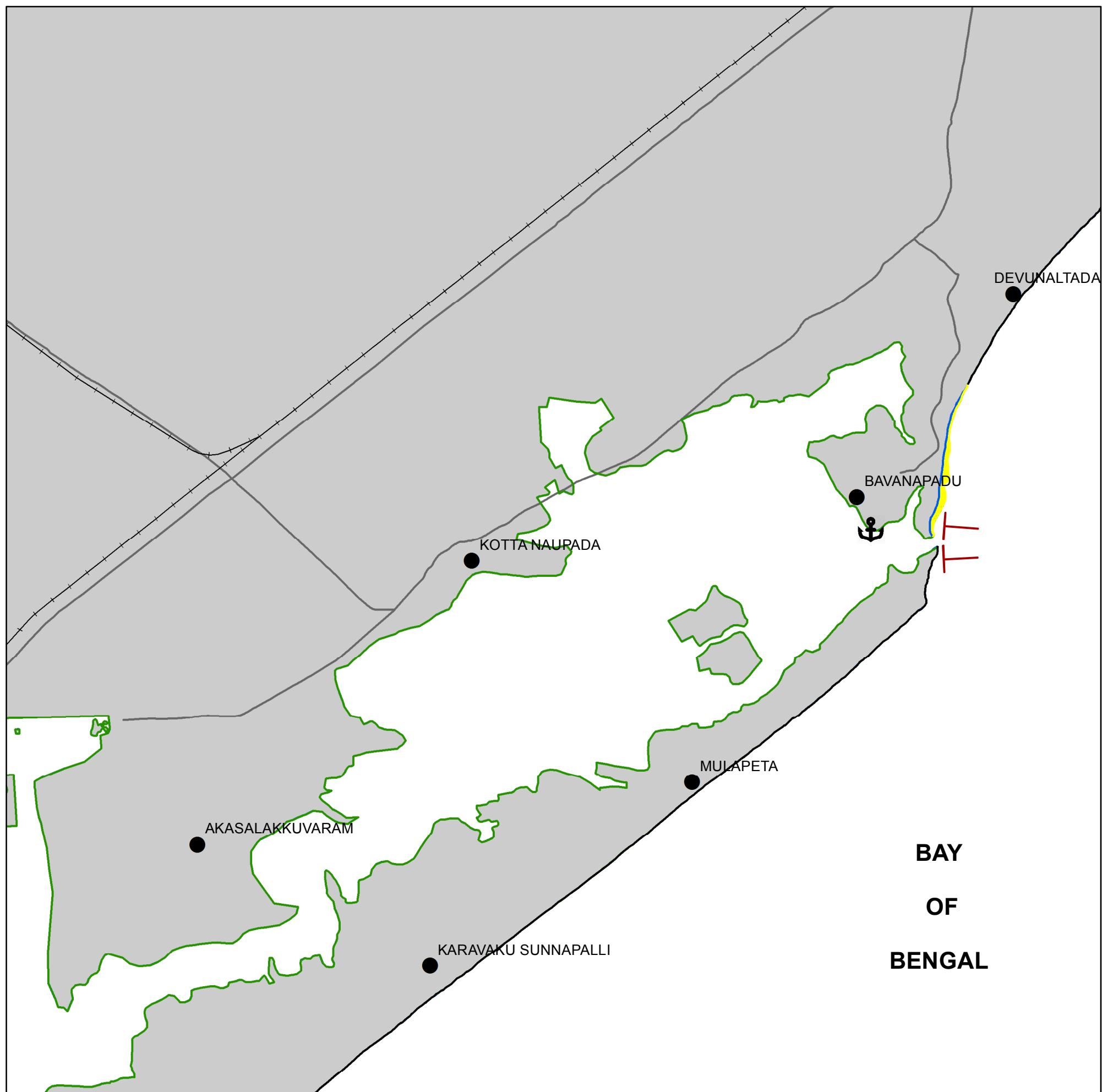
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B06SW



## Legend

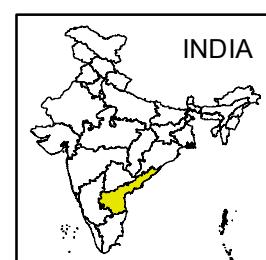
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- BREAKWATER
- PORT/HARBOUR
- HABITATION



0 2 km

## INDEX TO SHEETS

74B02NE	74B06NW	74B06NE
74B02SE	74B06SW	74B06SE
74B03NE	74B07NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



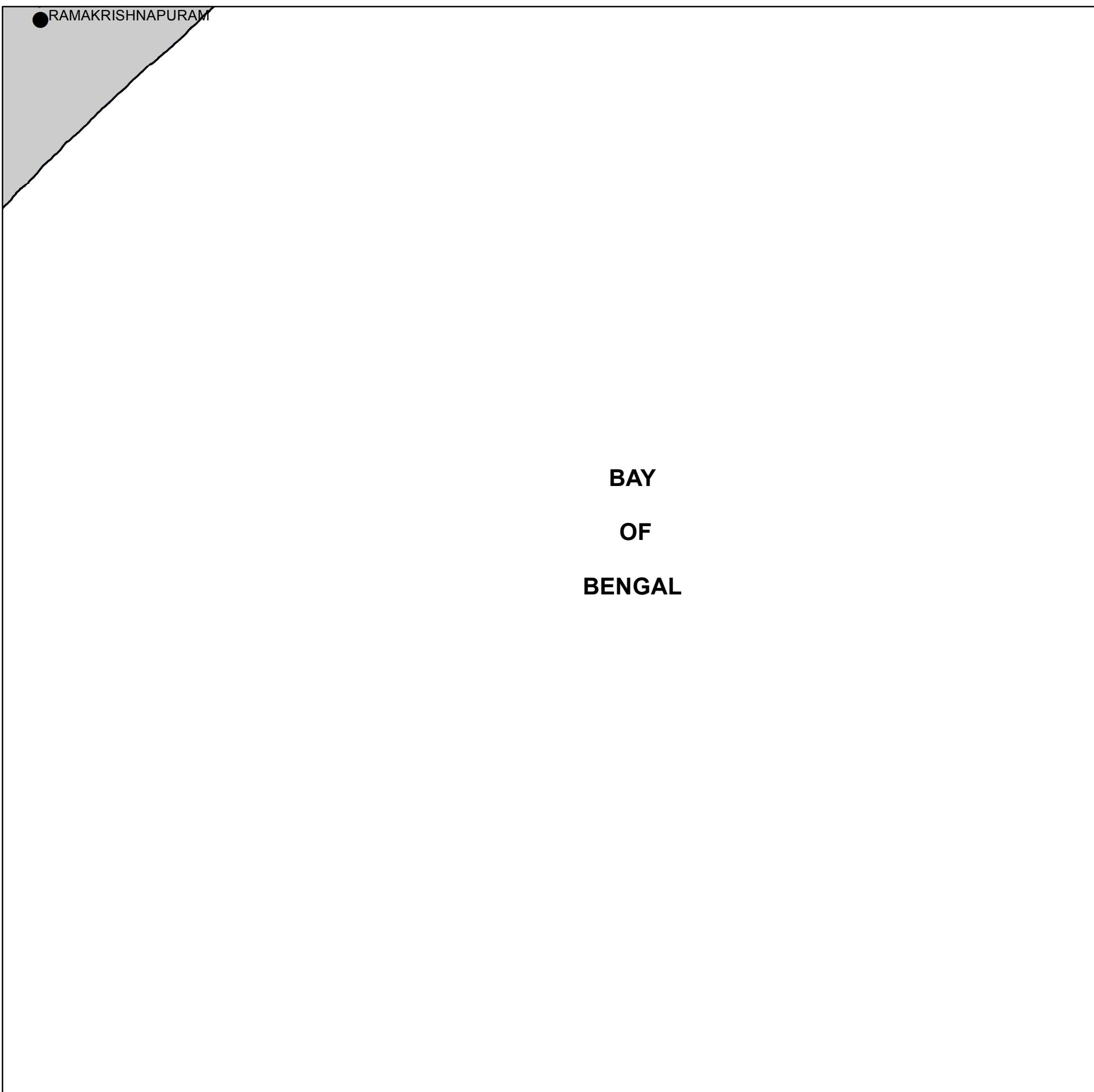
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B06SE



BAY

OF

BENGAL

## Legend

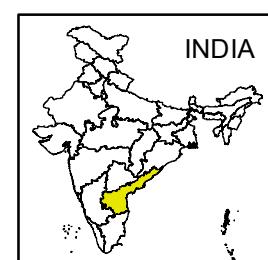
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- HABITATION



0

2 km

INDEX TO SHEETS		
74B06NW	74B06NE	74B10NW
74B06SW	74B06SE	SEA
74B07NW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



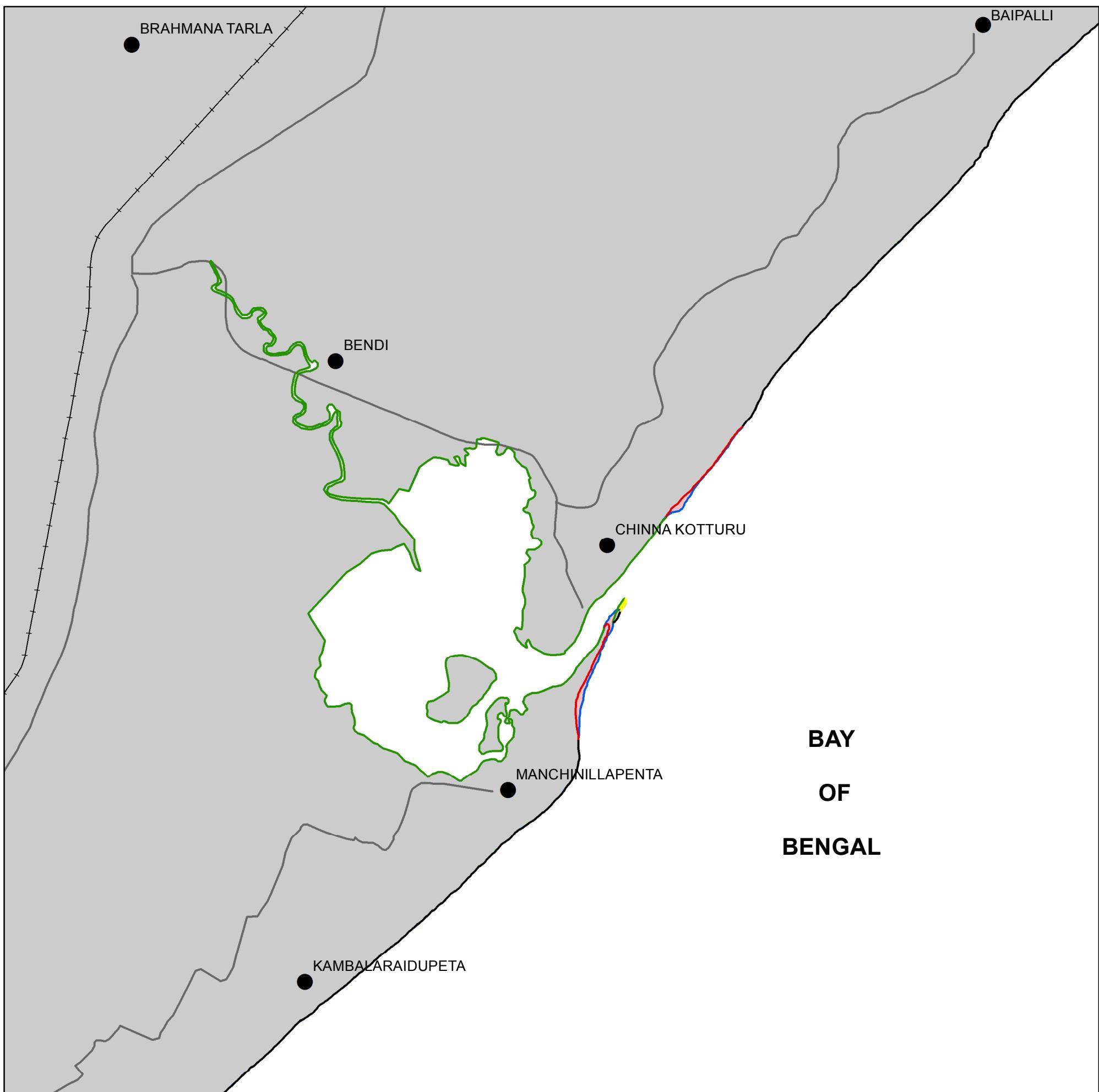
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B06NE



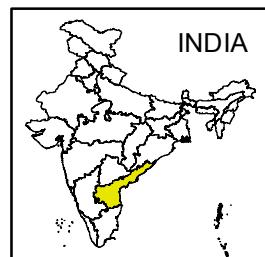
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

74B05SW	74B05SE	74B09SW
74B06NW	74B06NE	74B10NW
74B06SW	74B06SE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

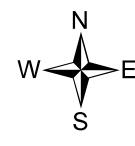
FOR OFFICIAL USE ONLY

SHEET NO. 74B10NW

BAY  
OF  
BENGAL

## Legend

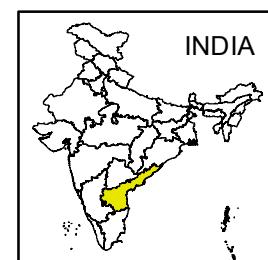
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE



0

2 km

INDEX TO SHEETS		
74B05SE	74B09SW	SEA
74B06NE	74B10NW	SEA
74B06SE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



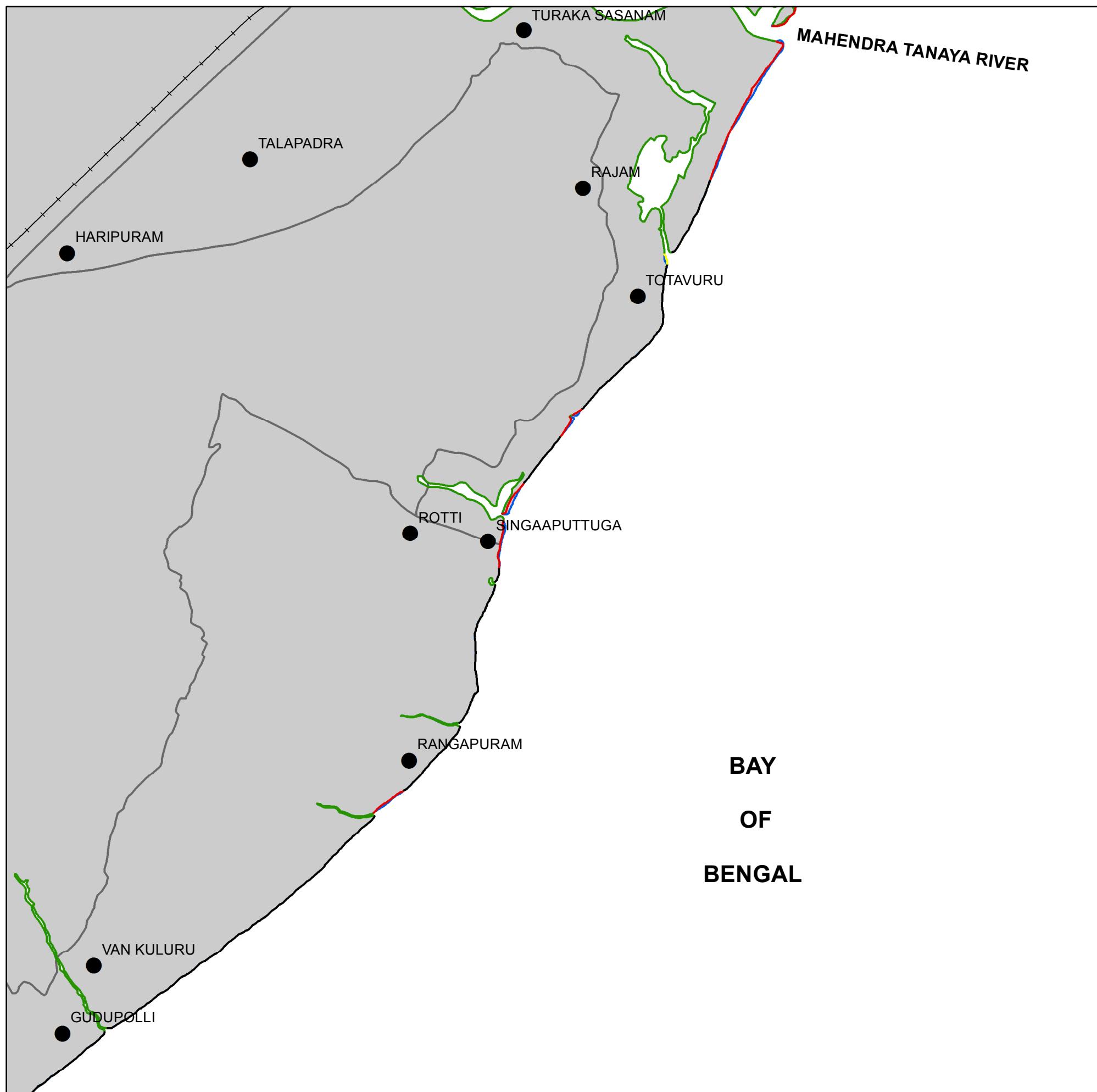
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B09SW



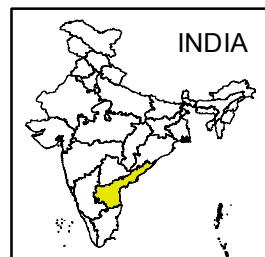
## Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

74B05NE	74B09NW	74B09NE
74B05SE	74B09SW	SEA
74B06NE	74B10NW	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



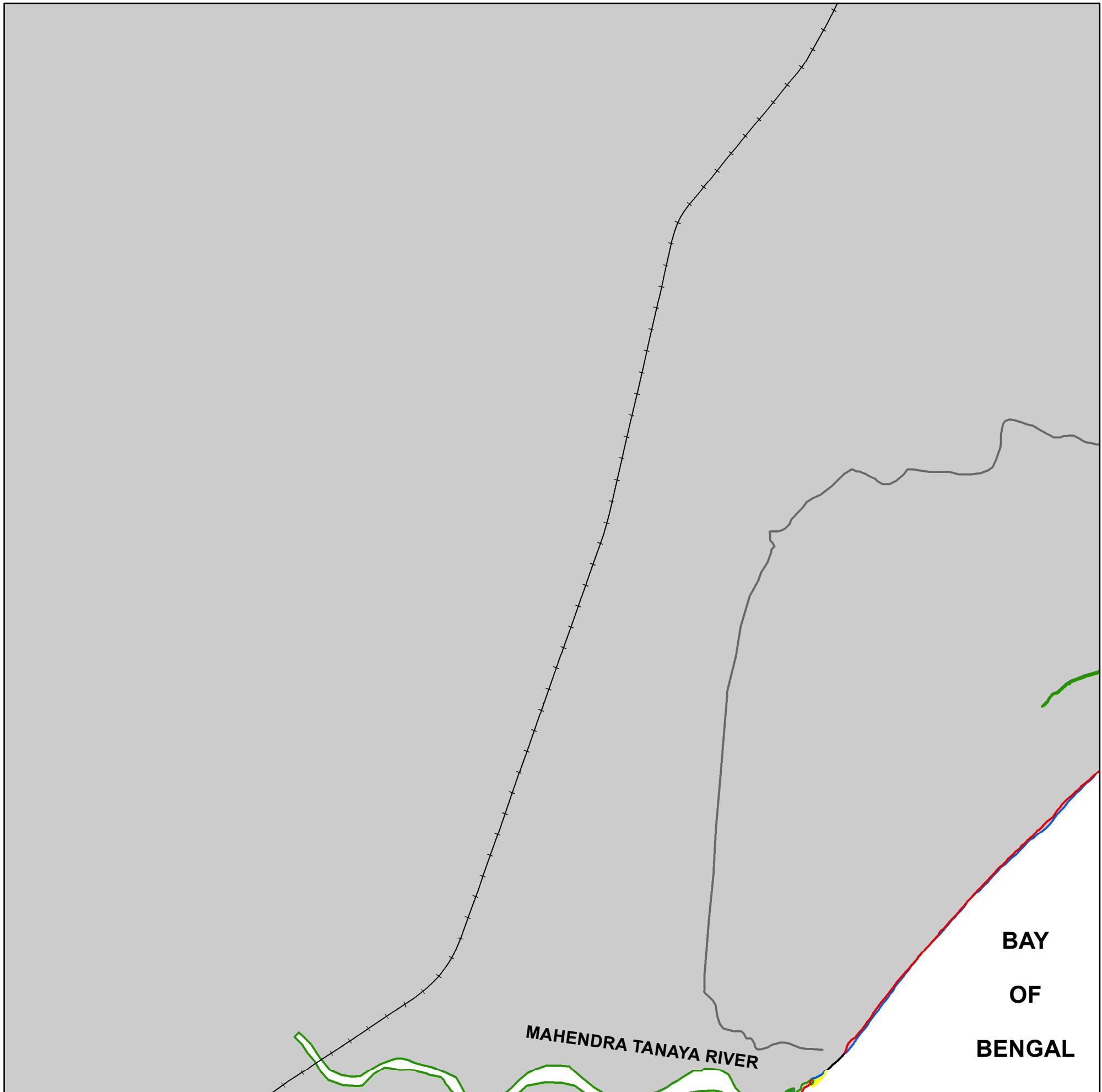
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B09NW



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



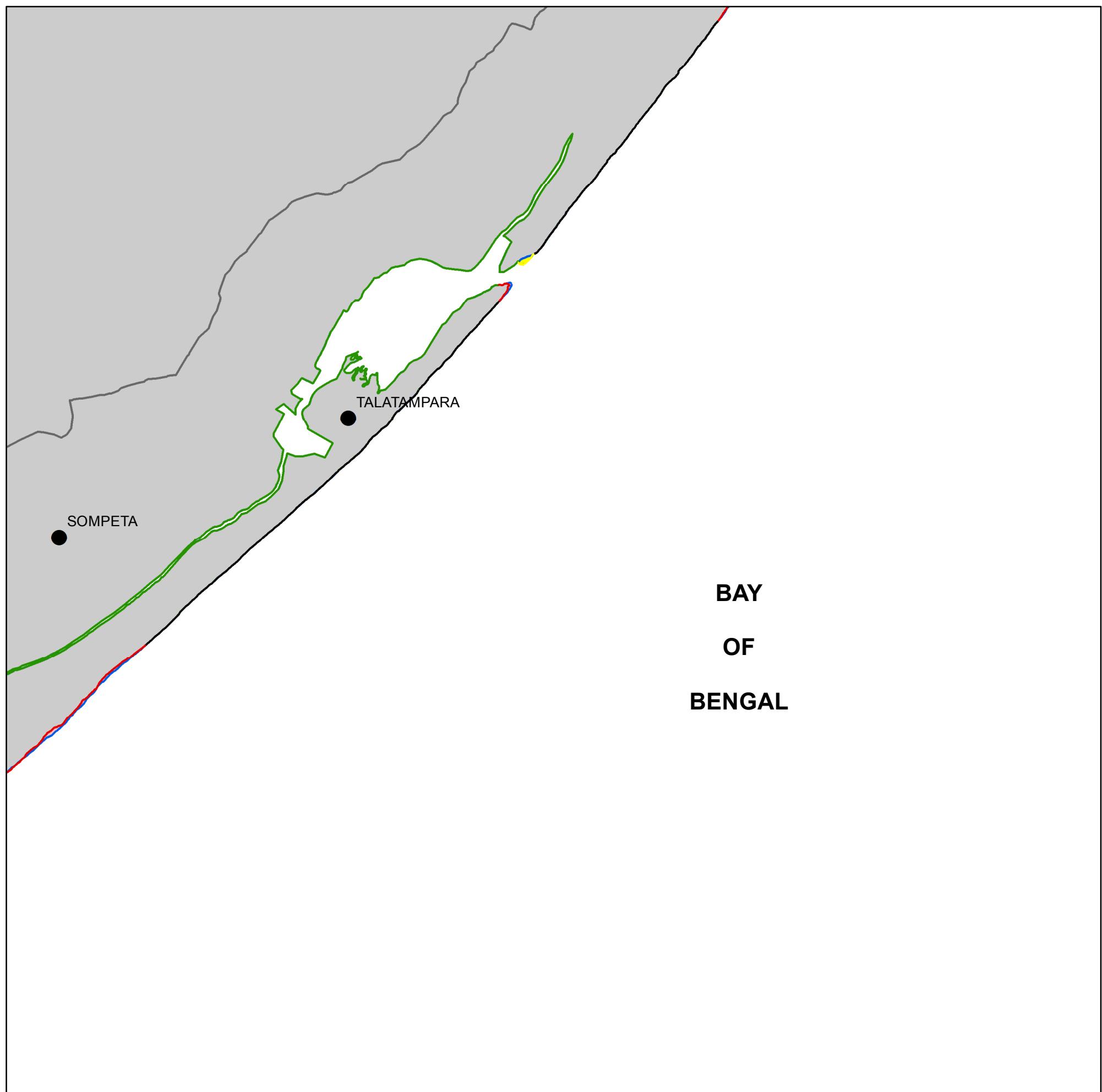
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

SHEET NO. 74B09NE



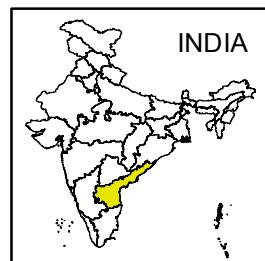
## Legend

- EROSION
- ACCRECTION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- HABITATION



0 2 km

INDEX TO SHEETS		
74A12SW	74A12SE	74A16SW
74B09NW	74B09NE	SEA
74B09SW	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



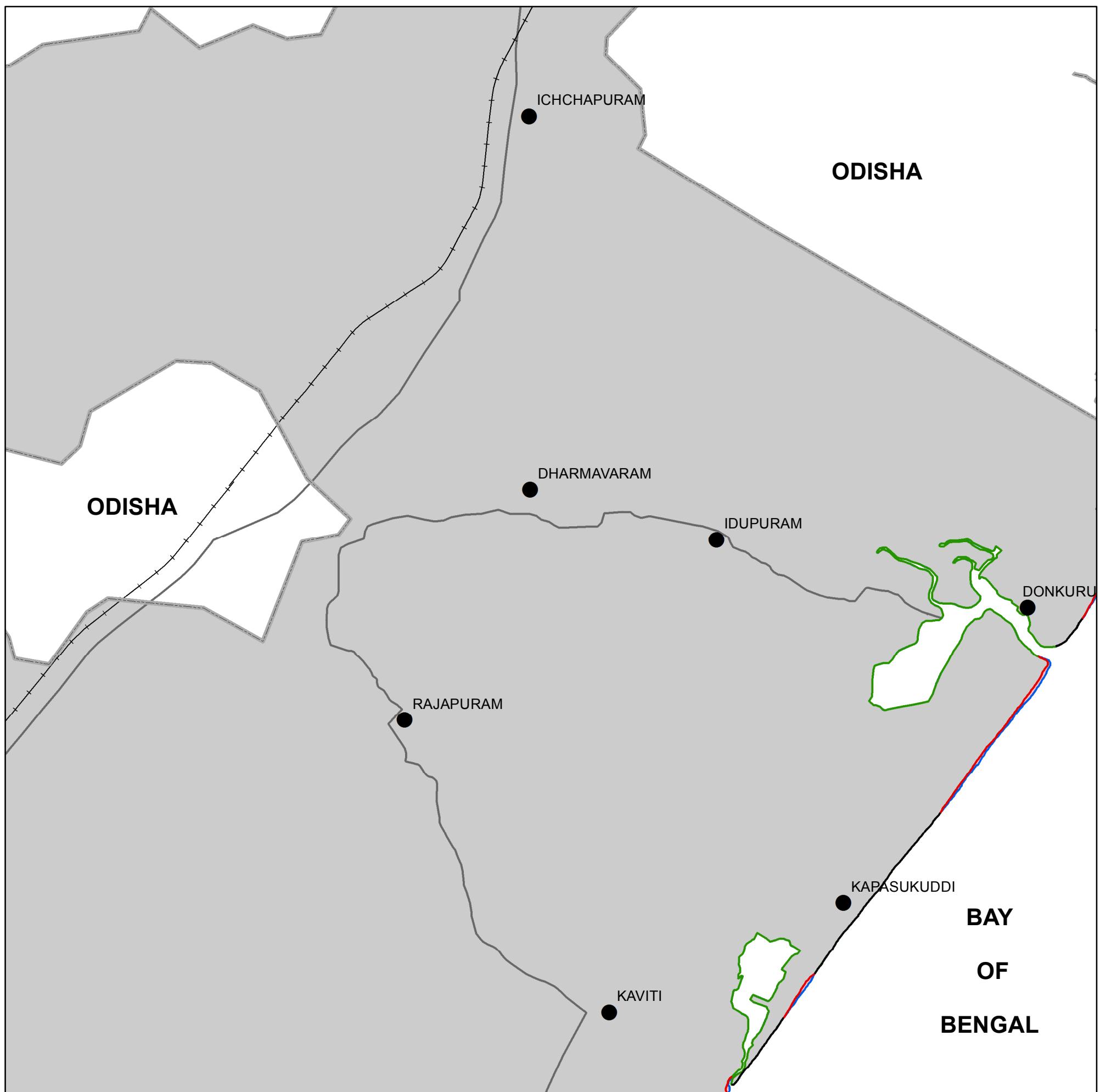
# SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

SRIKAKULAM DISTRICT

ANDHRA PRADESH

SHEET NO. 74A12SE



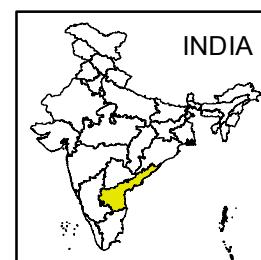
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- RAILWAY
- HABITATION



0 2 km

74A12NW	74A12NE	74A16NW
74A12SW	74A12SE	74A16SW
74B09NW	74B09NE	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



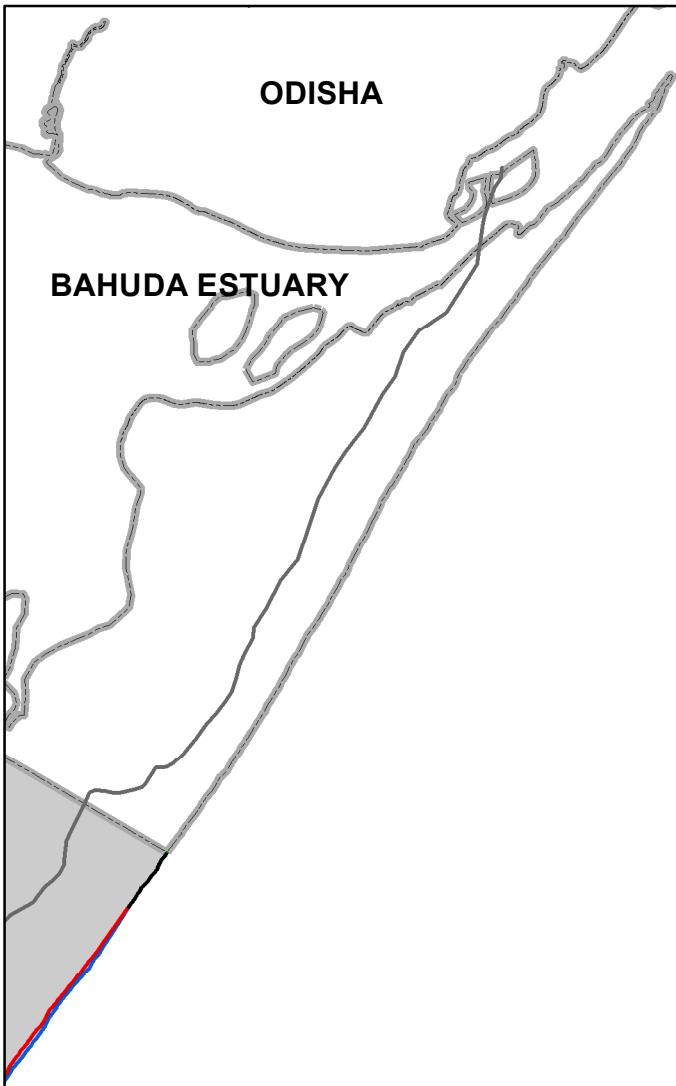
# SHORELINE CHANGE MAP

SRIKAKULAM DISTRICT

ANDHRA PRADESH

FOR OFFICIAL USE ONLY

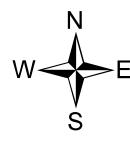
SHEET NO. 74A16SW



BAY  
OF  
BENGAL

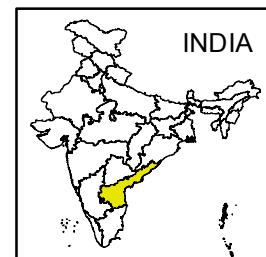
## Legend

- EROSION
- HIGH-TIDE LINE 2014-16
- HIGH-TIDE LINE 2004-06
- STABLE
- ROAD
- STATE BOUNDARY
- HABITATION



0 2 km

INDEX TO SHEETS		
74A12NE	74A16NW	SEA
74A12SE	74A16SW	SEA
74B09NE	SEA	SEA



DATA SOURCE:  
IRS LISS4 IMAGES OF 2004-06 & 2014-16

PREPARED BY:  
SPACE APPLICATIONS CENTRE, ISRO, AHMEDABAD  
AND CENTRAL WATER COMMISSION, NEW DELHI



## **HOT SPOTS OF SHORELINE CHANGE**

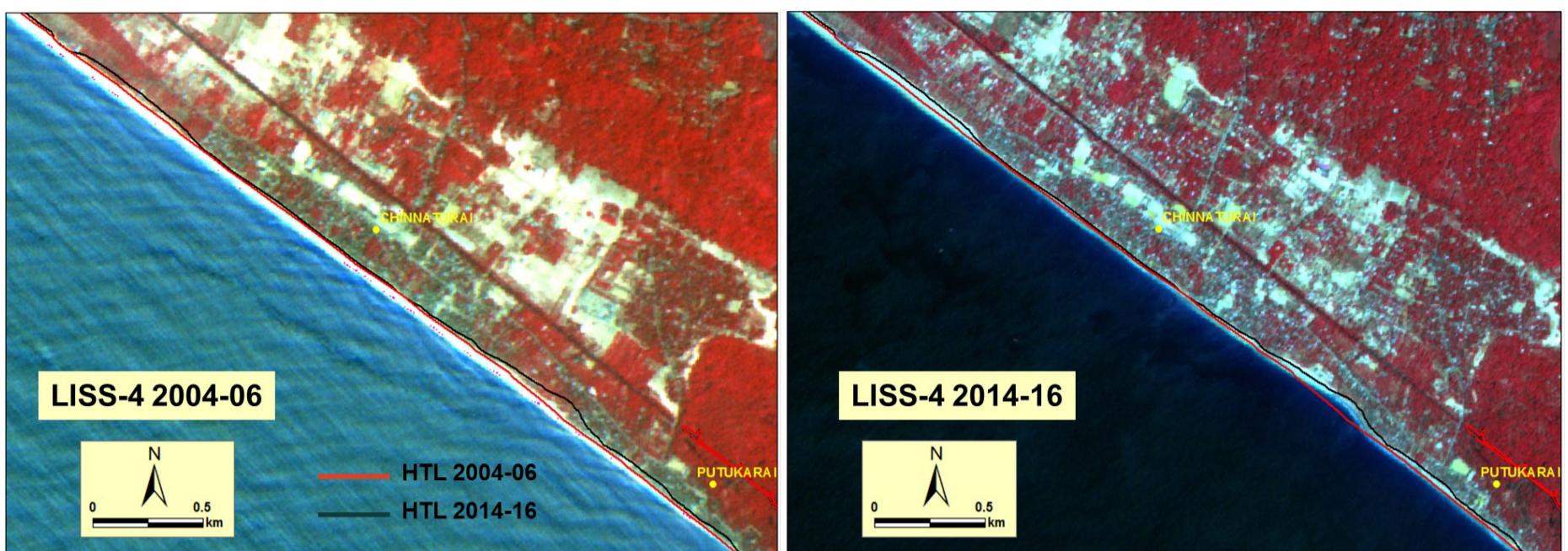


Plate 1: Coastal erosion at Chinnaturai (58H03SW) marked on LISS IV images of IRS P6 and Resourcesat-2

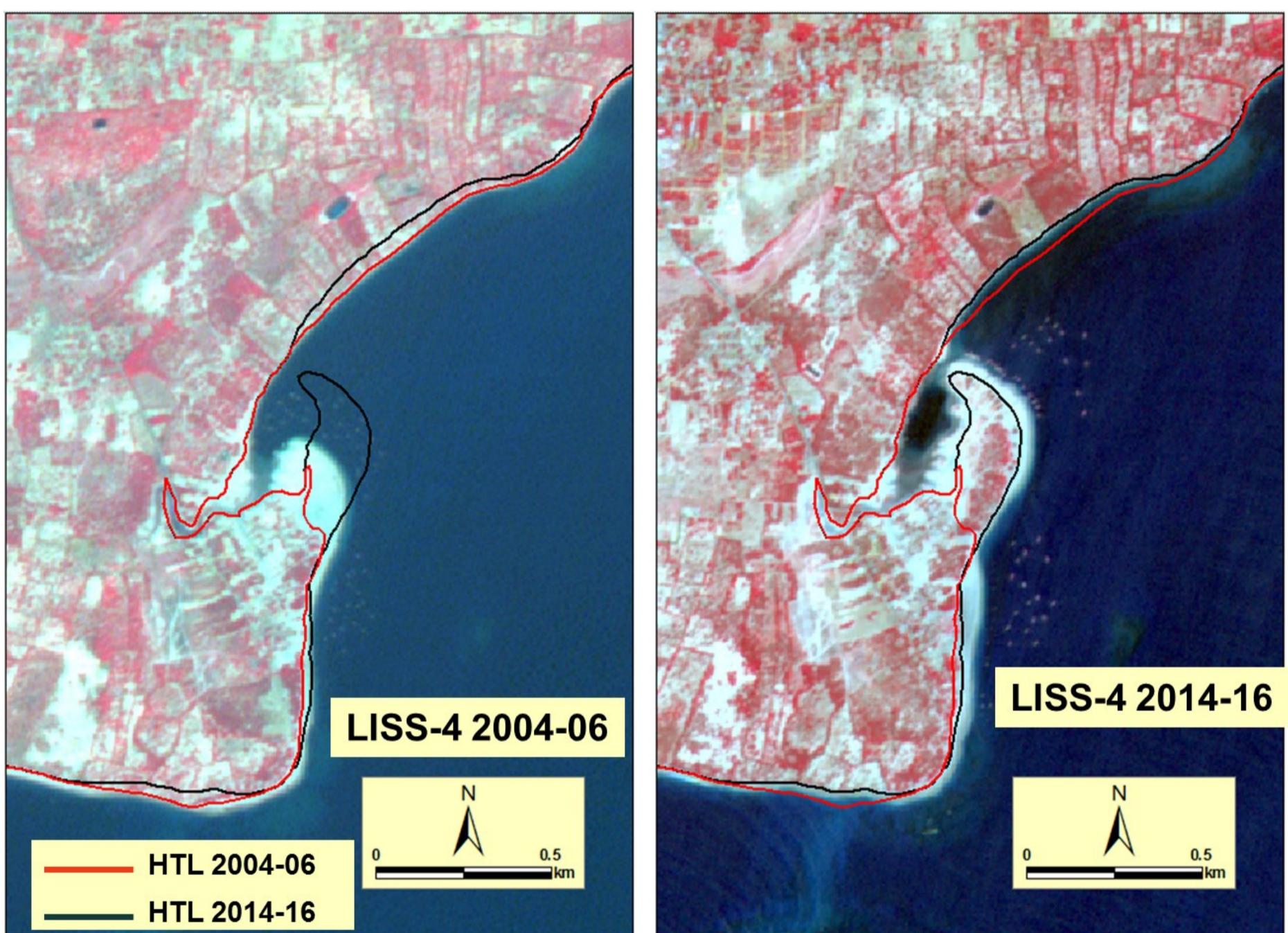


Plate 2: Erosion and accretion near Ervadi (58K12NE) marked on LISS IV images of IRS P6 and Resourcesat-2

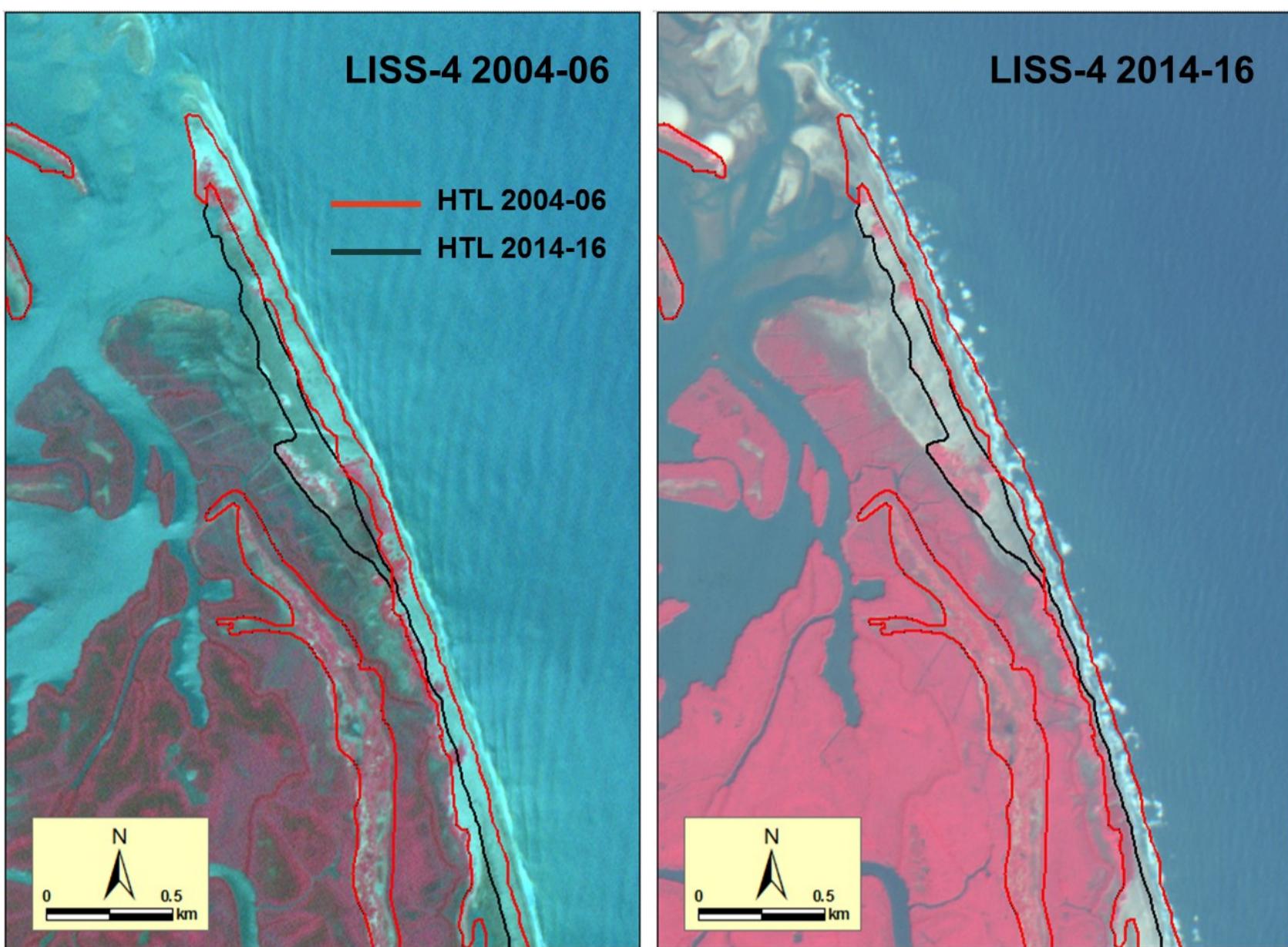


Plate 3: Erosion along the spit at Pichavaram (58M15NW) marked on LISS IV images of IRS P6 and Resourcesat-2

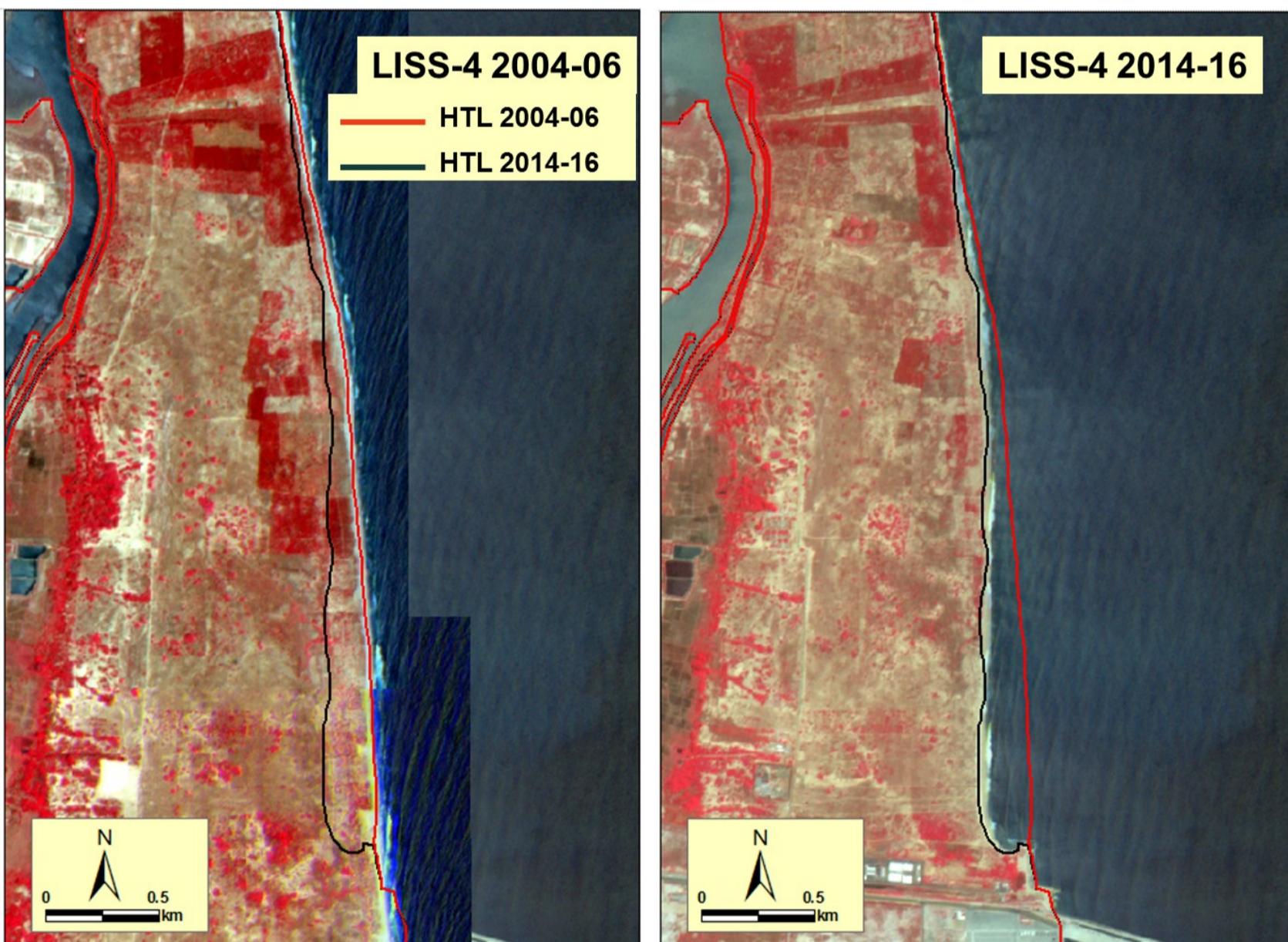


Plate 4: Erosion to the north of northern breakwater located near Karungali (66C07SW) marked on LISS IV images of IRS P6 and Resourcesat-2

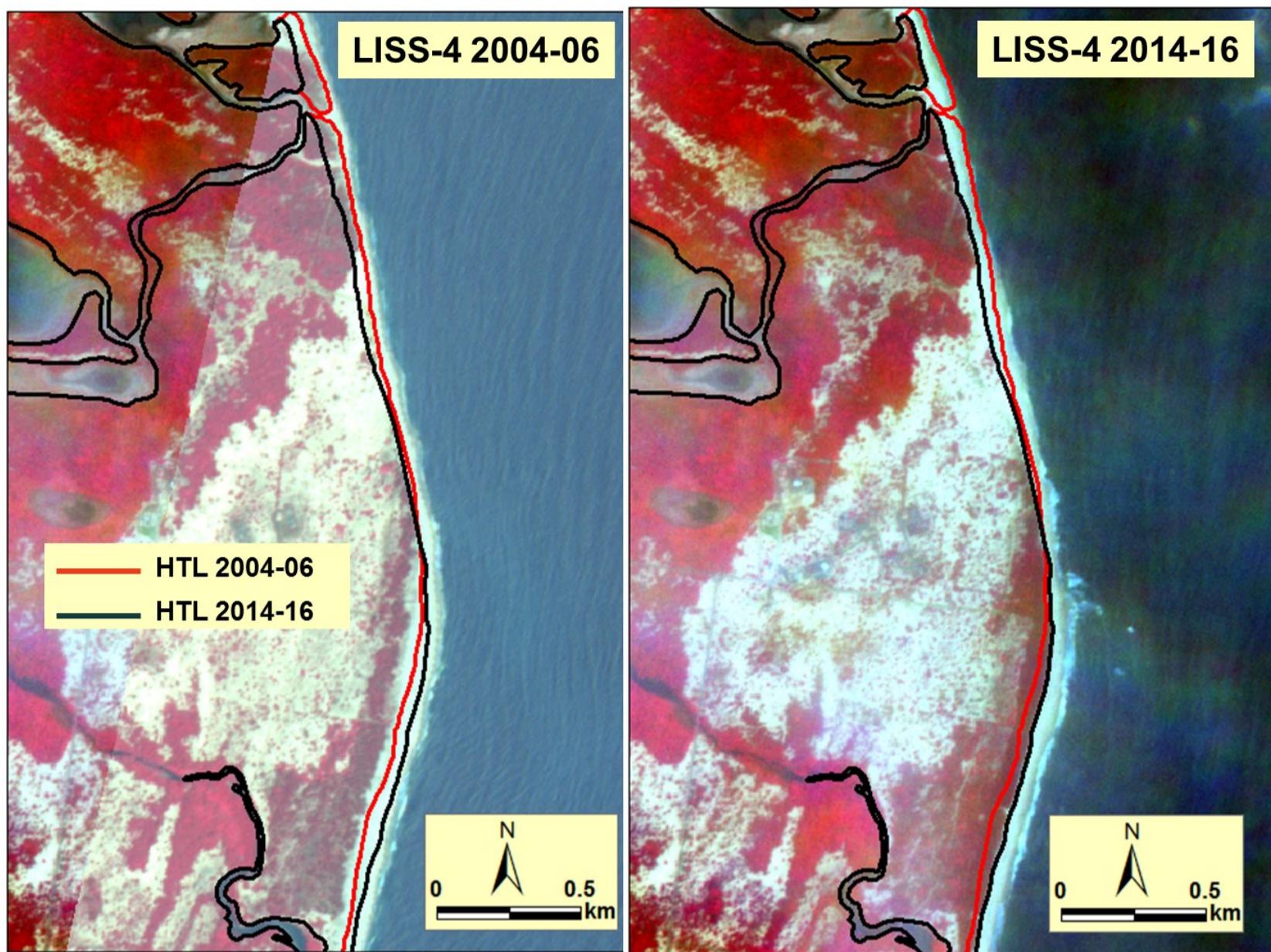


Plate 5: Accreting and eroding shoreline at Samatiyalakuppam (66C01SE and 66C05SW) marked on LISS IV images of IRS P6 and Resourcesat-2

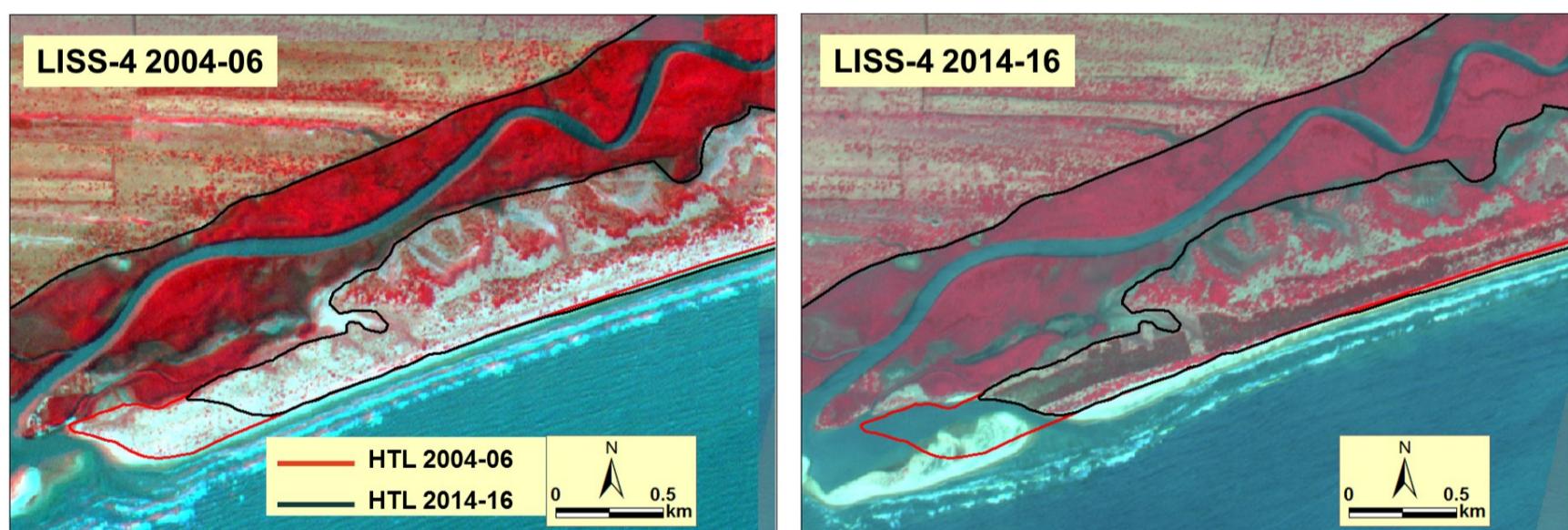


Plate 6: Erosion of the mouth to the north of Upputeru Canal (66A09SW) marked on LISS IV images of IRS P6 and Resourcesat-2

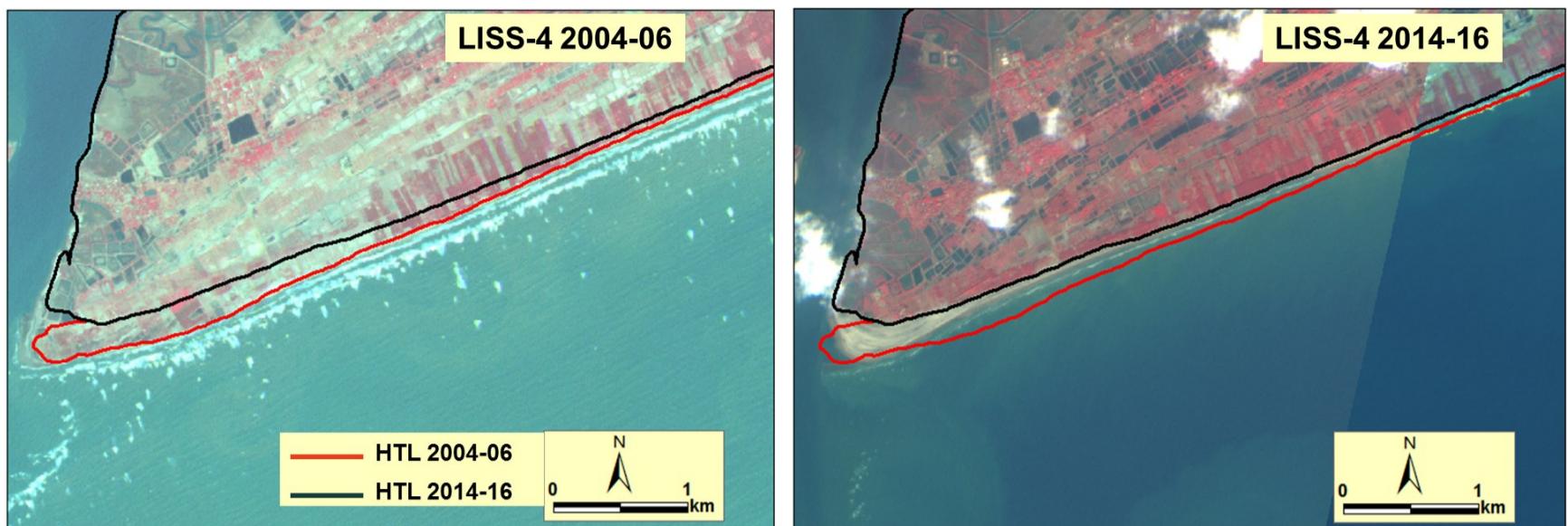


Plate 7: Erosion to the north of Godavari River (65H11SE) marked on LISS IV images of IRS P6 and Resourcesat-2

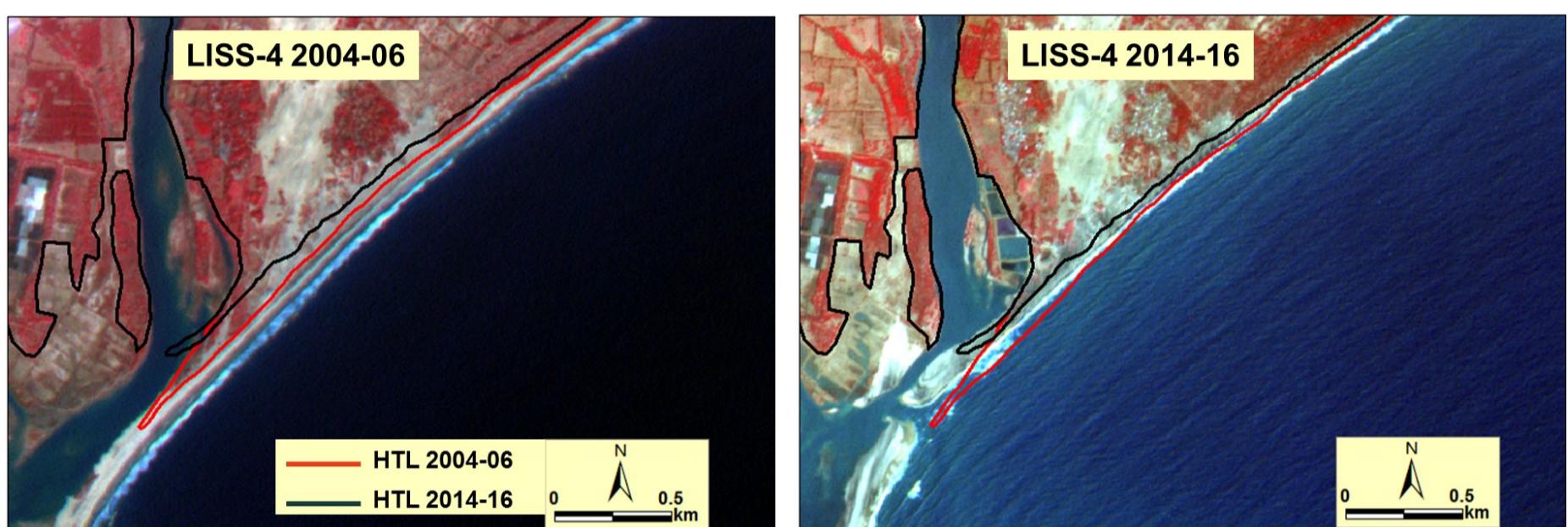


Plate 8: Erosion to the north of Gosthani River (65O05NE) marked on LISS IV images of IRS P6 and Resourcesat-2

## **LIST OF SATELLITE DATA USED**

Table No. 3: Satellite data used for Tamil Nadu and Puducherry Coast (2004-06 time-frame).

S. No.	Map Sheet No.	Satellite	Sensor	Orbit No.	Scene No.	Date
1	66C06NW,SW,SE	IRS P6	LISS IV	7375	111	19-03-2004
2	66C07NE,SE	IRS P6	LISS IV	7375	112	19-03-2004
3	66C08NE,SE	IRS P6	LISS IV	7375	113	19-03-2004
4	66D01NE,SE	IRS P6	LISS IV	7375	114	19-03-2004
5	66D02NE,SE	IRS P6	LISS IV	7376	115	19-03-2004
6	66D03NE,SE, SW	IRS P6	LISS IV	7376	116	19-03-2004
7	66D04NW,SW	IRS P6	LISS IV	7375	118	19-03-2004
8	57P16NW,SW	IRS P6	LISS IV	7375	117	19-03-2004
9	58M13NW,SW	IRS P6	LISS IV	7375	119	19-03-2004
10	58M10NW,SW	IRS P6	LISS IV	7375	120	19-03-2004
11	58M11NW,NE, SW	IRS P6	LISS IV	7376	121	19-03-2004
12	58N4NE, SE	IRS P6	LISS IV	7034	126	23-02-2005
13	58K14SW,SE	IRS P6	LISS IV	7247	127	03-10-2005
14	58K15SW,NW, NE	IRS P6	LISS IV	6423	131	01-11-2005
15	58K16NW	IRS P6	LISS IV	5798	133	11-28-2004
16	58K08NW,NE, SW	IRS P6	LISS IV	7176	134	11-28-2004
17	58L01NE,SE	IRS P6	LISS IV	7162	136	03-04-2005
18	58L02NE,SE	IRS P6	LISS IV	7162	137	03-04-2005
19	58H04NE	IRS P6	LISS IV	6551	140	1-20-2005
20	58H08SW	IRS P6	LISS IV	6892	12	2-13-2005
21	58L01NE,SW	IRS P6	LISS IV	6963	23	2-18-2005
22	66C06NW,SW	IRS P6	LISS IV	11808	121	1-25-2006
23	66C04NW,SW	IRS P6	LISS IV	11808	122	1-25-2006
24	66D01&66D05 NE,SE	IRS P6	LISS IV	11467	117	01-01-2006
25	66C07NW	IRS P6	LISS IV	7375	111	3-19-2005
26	66C07SW	IRS P6	LISS IV	7375	111, 112	3-19-2005
27	66C08NW	IRS P6	LISS IV	7375	112	3-19-2005
28	66C08SW	IRS P6	LISS IV	7929	111	4-27-2005
29	66D05NW	IRS P6	LISS IV	7375	113	3-19-2005
30	66D05SW	IRS P6	LISS IV	11808	123	1-25-2006
31	66D01SE	IRS P6	LISS IV	7375	114	3-19-2005
32	66D02NE	IRS P6	LISS IV	7375	114, 115	3-19-2005
33	66D03NW	IRS P6	LISS IV	7375	115, 116	3-19-2005
34	66D03SW	IRS P6	LISS IV	14337	141	7-22-2006
35	57P15SE	IRS P6	LISS IV	11467	122	01-01-2006
36	66D04NW	IRS P6	LISS IV	13044	141	4-22-2006
37	57P16NE,SE	IRS P6	LISS IV	7375	117	3-19-2005
38	57P16SW	IRS P6	LISS IV	11467	123	01-01-2006
39	58M13NW	IRS P6	LISS IV	11879	92	1-30-2006
40	58M13SW	IRS P6	LISS IV	11467	124	01-01-2006

41	58M10NE	IRS P6	LISS IV	11467	125	01-01-2006
42	58M10NE	IRS P6	LISS IV	12703	106	3-29-2006
43	58M14NW	IRS P6	LISS IV	11467	125	01-01-2006
44	58M10SE	IRS P6	LISS IV	10032	146	1-22-2005
45	58M14SW	IRS P6	LISS IV	11467	125, 126	01-01-2006
46	58M15NW	IRS P6	LISS IV	7375	120	3-19-2005
47	58M15SW	IRS P6	LISS IV	7375	121	3-19-2005
48	58M16NW	IRS P6	LISS IV	14337	146, 147	7-22-2006
49	58M16SW	IRS P6	LISS IV	14337	147	7-22-2006
50	58N13NW	IRS P6	LISS IV	11808	132	1-25-2006
51	58N13NW	IRS P6	LISS IV	13044	147	4-22-2006
52	58N13SW	IRS P6	LISS IV	1237	144	01-12-2004
53	58N14NW	IRS P6	LISS IV	11808	133	1-25-2006
54	58N14SW	IRS P6	LISS IV	11808	133, 134	1-25-2006
56	58N15NW	IRS P6	LISS IV	11808	134	1-25-2006
57	58N15SW	IRS P6	LISS IV	11808	134, 135	1-25-2006
58	58N15SE	IRS P6	LISS IV	3695	136, 137	03-07-2004
60	58N11SE	IRS P6	LISS IV	1237	146	12-01-2004
61	58N11SW	IRS P6	LISS IV	14337	150	22-07-2006
62	58N07SE	IRS P6	LISS IV	11879	7	30-01-2006
63	58N07SW	IRS P6	LISS IV	12703	112, 113	29-Mar-06
64	58N07SW	IRS P6	LISS IV	12703	113	29-Mar-06
65	58N08NW,SW	IRS P6	LISS IV	12703	113, 114	29-Mar-06
66	58O01NE	IRS P6	LISS IV	12703	153	29-Mar-06
67	58O01NW,SW	IRS P6	LISS IV	12703	154	12-Apr-06
68	58O02NW,58K14N E	IRS P6	LISS IV	12149	113	18-Feb-06
69	58K14SE	IRS P6	LISS IV	12632	112	24-Mar-06
70	58K15NE,SE	IRS P6	LISS IV	12149	114, 115	18-Feb-06
71	58O03SW	IRS P6	LISS IV	7929	9	27-04-2005
72	58O03SE	IRS P6	LISS IV	11467	136	01-Jan-06
73	58O07SW	IRS P6	LISS IV	3283	146	06-Apr-04
74	58O08NE,NW	IRS P6	LISS IV	14337	155, 156	22-07-2006
75	58O04NE	IRS P6	LISS IV	11467	136	01-Jan-06
76	58O04NW	IRS P6	LISS IV	7247	128	10-03-2005
77	58K16NE	IRS P6	LISS IV	6423	131	11-01-2006
78	58K15SW	IRS P6	LISS IV	12632	113, 114	24-03-2006

79	58K12NE	IRS P6	LISS IV	8270, 12632	14,11 4	24-05- 2006,21-05- 2005
80	58K12NW,SW	IRS P6	LISS IV	8270	14	21-05-2005
81	58K08NE	IRS P6	LISS IV	9293	129	01-08-2005
82	58K08SE,SW	IRS P6	LISS IV	12206	120	22-02-2006
83	58L05NW	IRS P6	LISS IV	12206	120	22-02-2006
84	58K04SE	IRS P6	LISS IV	7162,12206 , 7162	134, 120, 135	04-03-2005, 22-02-2006
85	58L01NE	IRS P6	LISS IV	7162	135, 134	04-03-2005
86	58L01SE	IRS P6	LISS IV	7176	135	05-03-2005
87	58L02NE	IRS P6	LISS IV	12206	122	22-02-2006
88	58L02SE	IRS P6	LISS IV	7787	132	17-04-2005
89	58L02NW	IRS P6	LISS IV	7162	136	04-03-2005
90	58L02SW	IRS P6	LISS IV	7162, 7162, 7787	136, 137, 132	04-03-2005
91	58L03NW	IRS P6	LISS IV	3553, 12206	13,12 3	23-06- 2004,22-02- 2006
92	58L03SW	IRS P6	LISS IV	7787, 7162	133, 138	17-04- 2005,04-03- 2005
93	58H15SE	IRS P6	LISS IV	7162	138	04-03-2005
94	58H15SW	IRS P6	LISS IV	13101, 7162	162, 138	26-04- 2006,04-03- 2005
95	58H16NW	IRS P6	LISS IV	13101	162, 163	26-04-2006
96	58H12NE	IRS P6	LISS IV	9350	141	05-08-2005
97	58H12NW	IRS P6	LISS IV	8327, 9350	135, 141	25-05- 2005,05-08- 2005
98	58H12SW	IRS P6	LISS IV	8327	136	25-05-2005
99	58H08NE	IRS P6	LISS IV	1507	156	31-01-2004
100	58H08SE	IRS P6	LISS IV	8327	136	25-05-2005
101	58H08NW	IRS P6	LISS IV	8128	138	11-05-2005
102	58H04NE	IRS P6	LISS IV	12888	162	11-04-2006
103	58H03SE,SW	IRS P6	LISS IV	12135	161	17-02-2006

Table No. 4: Satellite data used for Tamil Nadu and Puducherry (2014-16 time-frame).

S. No.	Map sheet No.	Satellite	Sensor	Path	Row	Subscene	Date
1	58H03SW	IRS-R2	L4FX	100	68	B	04-Jan-15
2	58H03SE	IRS-R2	L4FX	101	68	D	02-Feb-15
3	58H04NE	IRS-R2	L4FX	101	68	D	02-Feb-15
4	58H08NW	IRS-R2	L4FX	101	68	D	02-Feb-15
5	58H08SW	IRS-R2	L4FX	101	68	D	02-Feb-15
6	58H08SE	IRS-R2	L4FX	101	68	D	02-Feb-15
7	58h12sw	IRS-R2	L4FX	101	68	D	02-Feb-15
8	58h12nw	IRS-R2	L4FX	101	68	D	02-Feb-15
9	58h12ne	IRS-R2	L4FX	101	68	D	02-Feb-15
10	58H16NW	IRS-R2	L4FX	101	68	D	02-Jun-15
11	58H15SW	IRS-R2	L4FX	101	68	D	02-Jun-15
12	58H15SE	IRS-R2	L4FX	101	68	D	02-Jun-15
13	58L03SW	IRS-R2	L4FX	101	68	D	02-Jun-15
14	58L03NW	IRS-R2	L4FX	101	68	D	16-Mar-16
15	58L03NE	IRS-R2	L4FX	101	68	D	16-Mar-16
16	58L02SW	IRS-R2	L4FX	101	68	D	16-Mar-16
17	58L02SE	IRS-R2	L4FX	101	68	D	16-Mar-16
18	58L02NE	IRS-R2	L4FX	101	68	D	16-Mar-16
19	58L01SE	IRS-R2	L4FX	101, 101	68, 67	D,D	16-03-2016, 02-Jun-2015
20	58L01NE	IRS-R2	L4FX	101	67	D	02-Jun-15
21	58L05NW	IRS-R2	L4FX	101	67	D	02-Jun-15
22	58K08SW	IRS-R2	L4FX	101	67	D	02-Jun-15
23	58K08SE	IRS-R2	L4FX	101	67	D	02-Jun-15
24	58K08NE	IRS-R2	L4FX	101	67	D	02-Jun-15
25	58K12NW	IRS-R2	L4FX	101, 102	67, 67	D, C	02-06-2015, 25-July-2015
26	58K12NE	IRS-R2	L4FX	102	67	C	25-Jul-15
27	58K16NW	IRS-R2	L4FX	102	67	C	25-Jul-15
28	58K15SW	IRS-R2	L4FX	102	67	C	25-Jul-15
29	58K16NE	IRS-R2	L4FX	102	67	C	25-Jul-15
30	58K15SE	IRS-R2	L4FX	102	67	C	25-Jul-15
31	58O04NW	IRS-R2	L4FX	102	67	C	25-Jul-15
32	58O03SW	IRS-R2	L4FX	102	67	C	09-Jan-16
33	58O04NE	IRS-R2	L4FX	102	67	C	09-Jan-16
34	58O03SE	IRS-R2	L4FX	102	67	C	09-Jan-16
35	58O08NW	IRS-R2	L4FX	102	67	C	09-Jan-16
36	58O07SW	IRS-R2	L4FX	102	67	C	09-Jan-16
37	58O08NE	IRS-R2	L4FX	102	67	C	09-Jan-16
38	58K15NE	IRS-R2	L4FX	102	67	C	09-Jan-16
39	58K14SE	IRS-R2	L4FX	102, 102	67, 67	C, A	09-jan-2016, 03-03-2015
40	58K14NE	IRS-R2	L4FX	102	67	A	03-Mar-15
41	58O02NW	IRS-R2	L4FX	102	67	A	03-Mar-15

42	58O01SW	IRS-R2	L4FX	102	67	A	03-Mar-15
43	58O01NW	IRS-R2	L4FX	102	67	A	03-Mar-15
44	58O01NE	IRS-R2	L4FX	102	67	A	03-Mar-15
45	58N04SE	IRS-R2	L4FX	102, 102	67, 66	A, D	03-march-2015, 01-07- 2015
46	58N08SW	IRS-R2	L4FX	102, 102	67, 66	A, D	03-march-2015, 01-07- 2015
47	58N04NE	IRS-R2	L4FX	102	66	D	01-Jul-15
48	58N08NW	IRS-R2	L4FX	102	66	D	01-Jul-15
49	58N07SW	IRS-R2	L4FX	102	66	D	01-Jul-15
50	58N07SE	IRS-R2	L4FX	102	66	D	01-Jul-15
51	58N11SW	IRS-R2	L4FX	102	66	D	01-Jul-15
52	58N11SE	IRS-R2	L4FX	102	66	D	01-Jul-15
53	58N15SW	IRS-R2	L4FX	102	66	D	01-Jul-15
54	58N15SE	IRS-R2	L4FX	102	66	D	01-Jul-15
55	58N07NE	IRS-R2	L4FX	102	66	D	01-Jul-15
56	58N11NW	IRS-R2	L4FX	102	66	D	01-Jul-15
57	58N11NE	IRS-R2	L4FX	102	66	D	01-Jul-15
58	58N15NW	IRS-R2	L4FX	102	66	D	01-Jul-15
59	58N14SW	IRS-R2	L4FX	102, 102	66, 66	D, B	01-07-2015, 07-FEB- 2015
60	58N14NW	IRS-R2	L4FX	102, 102	66, 66	D, B	01-07-2015, 07-FEB- 2015
61	58N13SW	IRS-R2	L4FX	102	66	B	07-Feb-15
62	58N13NW	IRS-R2	L4FX	102	66	B	07-Feb-15
63	58M16SW	IRS-R2	L4FX	102	66	B	07-Feb-15
64	58M16NW	IRS-R2	L4FX	101	68	D	02-Jun-15
65	58M15SW	IRS-R2	L4FX	101	68	D	02-Jun-15
66	58M15NW	IRS-R2	L4FX	101	68	D	02-Jun-15
67	58M14SW	IRS-R2	L4FX	101	68	D	02-Jun-15
68	58M14NW	IRS-R2	L4FX	101	68	D	02-Jun-15
69	58M13SW	IRS-R2	L4FX	101	68	D	02-Jun-15
70	58M13NW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
71	57P16SW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
72	57P16SE	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
73	57P16NW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
74	57P16NE	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
75	66D04NW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
76	66D03SW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
77	66D03NW	IRS-R2	L4FX	101, 102	67, 64	D, B	02-06-2015, 15-DEC- 2016
78	66D03NE	IRS-R2	L4FX	102	64	B	15-Dec-16

79	66D02SE	IRS-R2	L4FX	102	64	B	15-Dec-16
80	66D02NE	IRS-R2	L4FX	102	64	B	15-Dec-16
81	66D01SE	IRS-R2	L4FX	102	64	B	15-Dec-16
82	66D05SW	IRS-R2	L4FX	102	64	B	15-Dec-16
83	66D05NW	IRS-R2	L4FX	102, 102	64, 64	B, B	15-12-2016, 01-JULY- 2015
84	66C08SW	IRS-R2	L4FX	102, 102	64, 64	B, B	15-12-2016, 01-JULY- 2015
85	66C08NW	IRS-R2	L4FX	102, 102	64, 64	B, B	15-12-2016, 01-JULY- 2015
86	66C07SW	IRS-R2	L4FX	102	64	B	01-Jul-15
87	66C07NW	IRS-R2	L4FX	102	64	B	01-Jul-15

Table No. 5: Satellite data used for Andhra Pradesh Coast (2004-06 time-frame).

S. No.	Map sheet No.	Satellite	Sensor	Orbit	Scene	Date
1	74A12SE	IRS-P6	LISS IV	6977	80,81	19-02-2005
2	74B9NE	IRS-P6	LISS IV	6977	81	19-02-2005
3	74B9NW	IRS-P6	LISS IV	6977	81	19-02-2005
4	74B9SW	IRS-P6	LISS IV	6977	82	19-02-2005
5	74B10NW	IRS-P6	LISS IV	6977	82	19-02-2005
6	74B6NE	IRS-P6	LISS IV	6977	82	19-02-2005
7	74B6SW	IRS-P6	LISS IV	8071	78	07-05-2005
8	74B7NE	IRS-P6	LISS IV	8071	79	07-05-2005
9	74B3SE	IRS-P6	LISS IV	8071	79	07-05-2005
10	74B3SW	IRS-P6	LISS IV	8071	80	07-05-2005
11	65N16NE	IRS-P6	LISS IV	6906	84	14-02-2005
12	65N16NW	IRS-P6	LISS IV	6906	85	14-02-2005
13	65O9NW	IRS-P6	LISS IV	6835	90	09-02-2005
14	65O5NE	IRS-P6	LISS IV	6835	91	09-02-2005
15	65O5SE	IRS-P6	LISS IV	6835	91	09-02-2005
16	65O6NW	IRS-P6	LISS IV	6835	91	09-02-2005
17	65O2SE	IRS-P6	LISS IV	7588	87	03-04-2005
18	65O2SW	IRS-P6	LISS IV	7588	87	03-04-2005
19	65O3NW	IRS-P6	LISS IV	7588	88	03-04-2005
20	74B4NW	IRS-P6	LISS IV	6906	84	14-07-2005
21	65K15SW	IRS-P6	LISS IV	8881	94	03-07-2005
22	65K11SE	IRS-P6	LISS IV	8881	94	03-07-2005
23	65K11SW	IRS-P6	LISS IV	8881	94	03-07-2005
24	65K12SW	IRS-P6	LISS IV	12163	99	19-02-2005
25	65K12NW	IRS-P6	LISS IV	12163	99	19-02-2005
26	65K8NE	IRS-P6	LISS IV	12163	99	19-02-2005
27	65K8SE	IRS-P6	LISS IV	12163	99	19-02-2005
28	65K8SW	IRS-P6	LISS IV	12163	99	19-02-2005
29	65L5NW	IRS-P6	LISS IV	12163	100	19-02-2005
30	65L5SW	IRS-P6	LISS IV	12163	101	19-02-2005
31	65L6NW	IRS-P6	LISS IV	12163	102	19-02-2005

32	65L6SW	IRS-P6	LISS IV	12163	102	19-02-2005
33	65L2SE	IRS-P6	LISS IV	12163	102	19-02-2005
34	65L3NE	IRS-P6	LISS IV	12163	102	19-02-2005
35	65L3NW	IRS-P6	LISS IV	9080	101	17-07-2005
36	65H15NE	IRS-P6	LISS IV	9080	102	17-07-2005
37	65H11SE	IRS-P6	LISS IV	10856	97	19-11-2005
38	65H11SW	IRS-P6	LISS IV	10856	97	19-11-2005
39	65H7SW	IRS-P6	LISS IV	11808	107	25-01-2006
40	65H3SE	IRS-P6	LISS IV	11808	107	25-01-2006
41	65H4NE	IRS-P6	LISS IV	11808	107	25-01-2006
42	65H4NE	IRS-P6	LISS IV	11808	108	25-01-2006
43	65H4SE	IRS-P6	LISS IV	11808	108	25-01-2006
44	65H4SE	IRS-P6	LISS IV	11808	108	25-01-2006
45	66 E1NE	IRS-P6	LISS IV	11808	109	25-01-2006
46	66 E1NW	IRS-P6	LISS IV	11808	109	25-01-2006
47	66 E1SW	IRS-P6	LISS IV	11808	109	25-01-2006
48	66 E1SW	IRS-P6	LISS IV	11808	110	25-01-2006
49	66A3SE	IRS-P6	LISS IV	11808	109	25-01-2006
50	66A3SE	IRS-P6	LISS IV	11808	110	25-01-2006
51	66 E2NW	IRS-P6	LISS IV	11808	110	25-01-2006
52	66A14NE	IRS-P6	LISS IV	11808	110	25-01-2006
53	66A13SW	IRS-P6	LISS IV	7375	100	19-03-2005
54	66A9SW	IRS-P6	LISS IV	6423	101	11-01-2005
55	66A5SE	IRS-P6	LISS IV	6423	101	11-01-2005
56	66A5SW	IRS-P6	LISS IV	6423	101	11-01-2005
57	66A6NW	IRS-P6	LISS IV	6423	101	11-01-2005
58	66A6NW	IRS-P6	LISS IV	7427	98	10-01-2005
59	66A9NE	IRS-P6	LISS IV	10032	126	22-09-2005
60	66A5SE	IRS-P6	LISS IV	12149	85	18-02-2005
61	66A5SW	IRS-P6	LISS IV	12149	85	18-02-2005
62	66A6NW	IRS-P6	LISS IV	12149	85	18-02-2005
63	66A9NE	IRS-P6	LISS IV	12703	87	29-03-2006
64	66A9NW	IRS-P6	LISS IV	12703	87	29-03-2006
65	66A9SW	IRS-P6	LISS IV	12703	87	29-03-2006
66	66A9SE	IRS-P6	LISS IV	12703	87	29-03-2006
67	66A2SE	IRS-P6	LISS IV	12362	126	05-03-2006
68	66A3NE	IRS-P6	LISS IV	12362	127	05-03-2006
69	66A3SW	IRS-P6	LISS IV	12362	128	05-03-2006
70	66A4NW	IRS-P6	LISS IV	12362	128	05-03-2006
71	66A4SW	IRS-P6	LISS IV	12362	129	05-03-2006
72	66B2NE	IRS-P6	LISS IV	6423	106	11-01-2005
73	66B2SE	IRS-P6	LISS IV	12149	90	18-02-2006
74	66B1SW	IRS-P6	LISS IV	12362	130	05-03-2006
75	66B3NE	IRS-P6	LISS IV	6423	107	11-01-2005
76	66B3SE	IRS-P6	LISS IV	6423	107	11-01-2005
77	66B3SE	IRS-P6	LISS IV	6423	108	11-01-2005
78	66B4NE	IRS-P6	LISS IV	6423	108	11-01-2005
79	66B4NW	IRS-P6	LISS IV	6423	108	11-01-2005
80	66B3SE	IRS-P6	LISS IV	7034	107	23-02-2005

81	66B3NE	IRS-P6	LISS IV	12149	91	18-02-2006
82	66B4SE	IRS-P6	LISS IV	6423	109	11-01-2005
83	66C7NW	IRS-P6	LISS IV	7375	111	19-03-2005
84	66C1SE	IRS-P6	LISS IV	10174	110	02-10-2005
85	66C6SW	IRS-P6	LISS IV	7375	110	19-03-2005
86	66C6SW	IRS-P6	LISS IV	7375	111	19-03-2005

Table No. 6: Satellite data used for Andhra Pradesh Coast (2014-16 time-frame).

S. No.	Map Sheet No.	Satellite	Sensor	Path	Row	Subscene	Date
1	66C07NW	IRS-R2	L4FX	102	64	B	01-Jul-15
2	66C06SW	IRS-R2	L4FX	102	64	B	01-Jul-15
3	66C02SE	IRS-R2	L4FX	102	64	B	01-Jul-15
4	66C02NE	IRS-R2	L4FX	102	63	D	01-Jul-15
5	66C05SW	IRS-R2	L4FX	102	63	D	01-Jul-15
6	66C01SE	IRS-R2	L4FX	102	63	D	01-Jul-15
7	66C01NE	IRS-R2	L4FX	102	63	D	01-Jul-15
8	66B04SE	IRS-R2	L4FX	102, 102	63, 63	D, C	01-july-2015, 14-01-2015
9	66B04NE	IRS-R2	L4FX	102, 102	63, 63	D, C	01-july-2015, 14-01-2015
10	66B03SE	IRS-R2	L4FX	102, 102, 102	63, 63, 63	D, C, A	01-july-2015, 14-01-2015, 25-JULY-2015
11	66B03NE	IRS-R2	L4FX	102, 102	63, 63	C, A	14-JAN-2015, 25-07-2015
12	66B02SE	IRS-R2	L4FX	102	63	A	25-07-2015
13	66B02NE	IRS-R2	L4FX	102	63	A	25-Jul-15
14	66B02NW	IRS-R2	L4FX	102	63	A	25-Jul-15
15	66B01SW	IRS-R2	L4FX	102	63	A	25-Jul-15
16	66B01NW	IRS-R2	L4FX	102	63	A	25-Jul-15
17	66A04SW	IRS-R2	L4FX	102	63	A	25-Jul-15
18	66A04NW	IRS-R2	L4FX	102	63	A	25-Jul-15
19	66A03SW	IRS-R2	L4FX	102	63	A	25-Jul-15
20	66A03SE	IRS-R2	L4FX	102	63	A	25-Jul-15
21	66A03NE	IRS-R2	L4FX	102	63	A	25-Jul-15
22	66A02SE	IRS-R2	L4FX	102	62	A	25-Jul-15
23	66A02NE	IRS-R2	L4FX	102	62	A	25-Jul-15
24	66A06NW	IRS-R2	L4FX	102	62	A	25-Jul-15
25	66A05SW	IRS-R2	L4FX	102	62	A	25-Jul-15
26	66A05SE	IRS-R2	L4FX	102	62	A	25-Jul-15
27	66A09SW	IRS-R2	L4FX	102	62	A	25-Jul-15
28	66A09SE	IRS-R2	L4FX	102	62	A	25-Jul-15
29	66A13SW	IRS-R2	L4FX	102	62	A	25-Jul-15
30	66A13SE	IRS-R2	L4FX	102, 103	62, 62	A, A	25-07-2015, 30-JULY-2015
31	66E01SW	IRS-R2	L4FX	103	62	A	30-Jul-15

32	66A14NW	IRS-R2	L4FX	102	62	A	25-Jul-15
33	66A14NE	IRS-R2	L4FX	103, 103	62, 62	A, A	25-JULY-2015, 30- 07-2015
34	66A09NE	IRS-R2	L4FX	102	62	A	25-Jul-15
35	66A13NW	IRS-R2	L4FX	102	62	A	25-Jul-15
36	66A14NE	IRS-R2	L4FX	102, 103	62, 62	A, A	25-JULY-2015, 30- 07-2015
37	66E01NW	IRS-R2	L4FX	103	62	A	30-Jul-15
38	65H04SW	IRS-R2	L4FX	102	61	D	18-Aug-15
39	65H04SE	IRS-R2	L4FX	102	61	D	18-Aug-15
40	65H04NE	IRS-R2	L4FX	102	61	D	18-Aug-15
41	65H03SE	IRS-R2	L4FX	102	61	D	18-Aug-15
42	65H07SW	IRS-R2	L4FX	102, 103	61, 61	D, C	18-08-2015, 19-JAN- 2015
43	65H07SE	IRS-R2	L4FX	103	61	C	19-Jan-15
44	65H11SW	IRS-R2	L4FX	103	61	C	19-Jan-15
45	65H11SE	IRS-R2	L4FX	103, 103	61, 61	C, D	19-JAN-2015, 05-05- 2015
46	65H15SW	IRS-R2	L4FX	103	61	D	05-May-15
47	65H15NW	IRS-R2	L4FX	103	61	D	05-May-15
48	65H15NE	IRS-R2	L4FX	103	61	D	05-May-15
49	65L03NW	IRS-R2	L4FX	103	61	D	05-May-15
50	65L93NE	IRS-R2	L4FX	103	61	D	05-May-15
51	65L02SE	IRS-R2	L4FX	103	61	D	05-May-15
52	65L06SW	IRS-R2	L4FX	103	61	D	05-May-15
53	65L02NE	IRS-R2	L4FX	103	61	D	05-May-15
54	65L06NW	IRS-R2	L4FX	103	61	D	05-May-15
55	65L01SE	IRS-R2	L4FX	103	61	B	12-Feb-15
56	65L05SW	IRS-R2	L4FX	104	61	A	13-Mar-15
57	65L01NE	IRS-R2	L4FX	103	61	B	12-Feb-15
58	65L05NW	IRS-R2	L4FX	104	61	A	13-Mar-15
59	65K08SW	IRS-R2	L4FX	104	61	A	13-Mar-15
60	65K08SE	IRS-R2	L4FX	104	61	A	13-Mar-15
61	65K08NE	IRS-R2	L4FX	104	61	A	13-Mar-15
62	65K12NW	IRS-R2	L4FX	104	61	A	13-Mar-15
63	65K11SW	IRS-R2	L4FX	104	61	A	13-Mar-15
64	65K11SE	IRS-R2	L4FX	104	61	A	13-Mar-15
65	65K15SW	IRS-R2	L4FX	104	61	A	13-Mar-15
66	65K15NW	IRS-R2	L4FX	104	61	A	13-Mar-15
67	65K15NE	IRS-R2	L4FX	104, 104	61, 60	A, D	13-03-2015, 10-MAY- 2015
68	65O03NW	IRS-R2	L4FX	104	60	D	10-May-15
69	65O02SW	IRS-R2	L4FX	104	60	D	10-May-15
70	65O02SE	IRS-R2	L4FX	104	60	D	10-May-15
71	65O02NE	IRS-R2	L4FX	104	60	D	10-May-15
72	65O06NW	IRS-R2	L4FX	104	60	D	10-May-15
73	65O05SW	IRS-R2	L4FX	104	60	B	06-Apr-15
74	65O05SE	IRS-R2	L4FX	104	60	B	06-Apr-15
75	65O05NE	IRS-R2	L4FX	104	60	B	06-Apr-15

76	65O09NW	IRS-R2	L4FX	104	60	B	06-Apr-15
77	65N12SW	IRS-R2	L4FX	104	60	B	06-Apr-15
78	65N12SE	IRS-R2	L4FX	104	60	B	06-Apr-15
79	65N12NE	IRS-R2	L4FX	104	60	B	06-Apr-15
80	65N16NW	IRS-R2	L4FX	104	60	B	06-Apr-15
81	65N16NE	IRS-R2	L4FX	104, 105	60, 60	B, A	06-APR-2015, 18-03- 2015
82	74B04NW	IRS-R2	L4FX	105	60	A	18-Mar-15
83	74B03SW	IRS-R2	L4FX	105	60	A	18-Mar-15
84	74B03SE	IRS-R2	L4FX	105	60	A	18-Mar-15
85	74B03NE	IRS-R2	L4FX	105	60	A	18-Mar-15
86	74B07NW	IRS-R2	L4FX	105	60	A	18-Mar-15
87	74B06SW	IRS-R2	L4FX	105	60	A	18-Mar-15
88	74B06SE	IRS-R2	L4FX	105	60	A	18-Mar-15
89	74B06NE	IRS-R2	L4FX	105, 105	60, 59	A, D	18-03-2015, 05-JAN- 2015
90	74B10NW	IRS-R2	L4FX	105	59	D	05-Jan-15
91	74B09SW	IRS-R2	L4FX	105	59	D	05-Jan-15
92	74B09NW	IRS-R2	L4FX	105	59	D	05-Jan-15
93	74B09NE	IRS-R2	L4FX	105	59	D	05-Jan-15
94	74A12SE	IRS-R2	L4FX	105	59	D	05-Jan-15
95	74A16SW	IRS-R2	L4FX	105	59	B	22-Feb-15