SHORE LINE CHANGE ATLAS OF THE INDIAN COAST

(Volume – 6)

Lakshadweep Islands, Andaman and Nicobar Islands




Space Applications Centre (ISRO)
Ahmedabad 380015
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Coastal Erosion Directorate, Central Water Commission,
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Abstract	This Atlas comprises of shoreline change maps prepared using satellite data of 1989-91 and 2004-06 time-frame on 1:25,000 scale for the entire country (Volume – 6 shows maps of Lakshadweep Islands, Andaman and Nicobar Islands). 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.
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PREFACE

Coastal erosion is one of the most significant coastal hazards leading to loss of valuable land and property along the coastal zone. It is serious problem for the Indian coast, especially during monsoon and cyclonic storms and storm surge events. Developmental activities along the coast as well in the catchment areas of rivers draining into the sea cause changes in the equilibrium of sediment transport along the coast and induce coastal erosion. Climate Change and consequent threat due to predicted sea level rise is expected to further accelerate coastal erosion. Measures have been undertaken for protecting the coast by maritime States and Union Territories of the country at several places. It is required that a proper inventory of current status of coastal erosion and protection measures undertaken so far be made, so that effective planning for protecting the coast can be carried out.

Due to dynamic nature of the coast, baseline data at National level on current status of coastal erosion as well measures taken by maritime States and UTs is lacking and it is in this context and based on recommendations of Coastal Protection and Development Advisory Committee (CPDAC), present work of preparation of Shoreline Change Atlas of India has been undertaken by the Space Applications Centre (ISRO), Ahmedabad and Coastal Erosion Directorate of Central Water Commission (CWC), Ministry of Water Resources, New Delhi. The shoreline change maps depict changes mapped on 1:25, 000 scale using satellite images of 1989-91 and 2004-06 time frame and status of coastal protection measures taken up by maritime states and Union Territories. The entire database is digitized and put under GIS platform. The Atlas is brought out in Six Volumes and highlights type of satellite data used, methodology adopted and salient observations.

This Atlas provides a baseline data for initiating appropriate action for protecting the Indian coast by concerned maritime States and Union Territories besides use by the scientific community as well decision makers of the country. I appreciate efforts put by all those who have made contributions to this significant task.

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Foreword

Coastal Zone is one of the most fragile and dynamic ecosystem having the interface of sea and land. Interactions between various natural processes and human activities are important factors in the coastal areas. About 40% of the world's population lives within 100 km of the coastline and this proportion is increasing. There has been increasing anthropogenic pressure on the coastal ecosystem. In addition, the coastal ecosystems are vulnerable to natural phenomenon such as waves, tides, storm surges, erosion etc.

India has a long coastline of 7516 km including that of its Island territories. Coastal Zone in India, assumes its importance because of high population pressure, development of various industries and spurt in recreational activities, exploitation of renewable and non renewable natural resources, discharge of waste effluents and municipal sewage etc. Periodic storms and cyclones as well as erosion further adds to the problems in the coastal areas. In view of the dynamic nature of the coast, it needs to be monitored regularly.

Taking appropriate coastal protection measures require spatial information on the status of the shoreline and its dynamic behavior including the areas undergoing erosion and accretion. The spatial information on the change in shoreline over a period of time and the associated processes active along the Indian coast are not available. Thus, Space Applications Centre, at the behest of Central Water Commission, Ministry of Water Resources, Government of India has taken up the task of preparation of shoreline change inventory of Indian coast based on maps prepared using satellite data of 1989-91 and 2004-06 on 1:25,000 scale. These maps depict areas under erosion, accretion as well as stable coast. In addition, the status of coastal protection measures taken by states are also depicted. This is for the first time a spatial inventory on shoreline changes using satellite data has been created for the entire country.

I am sure, the present atlas will be useful to the scientific community and decision makers in investigating the coastal changes as well as in taking appropriate action for protecting the Indian coast and thus will go a long way in conserving the coastal environment of the country. I would like to place on record my deep appreciation to all those who have made contributions for the success of this project.

(A.S. Kiran Kumar)

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The baseline data on coastal landuse including delineation of HTL and LTL on 1:25, 000 scale has been prepared for 1989-1991 and 2004-2006 time frames using satellite data under two separate projects funded by Ministry of Environment and Forests (MoEF), Government of India, New Delhi. We gratefully acknowledge the funding support provided by MoEF and to all the participating agencies who have contributed in these projects.

The project on preparation of shoreline change for the Indian coast has been carried out jointly by Space Applications Centre and Central Water Commission, Ministry of Water Resources (MWR), Government of India. Ministry of Water Resources (MWR), Government of India is thankfully acknowledged for providing funds for preparing A-3 size Shoreline change Atlas of India using the available baseline data. We are thankful to Chairman CWC for his guidance and support. Our special thanks are due to Chairman and Members of Coastal Protection and Development Advisory Committee (CPDAC) for necessary support. Sub-Committee members of the Coastal Atlas are acknowledged for their useful suggestions and time to time guidance. Special thanks are to Director, Coastal Erosion Directorate, Central Water Commission, Ministry of Water Resources for his constant support and organizing collection of coastal protection measures data from all the maritime States and U.T. of India.

Thanks are due to Shri N.S. Mehta, Manager, RACF/EPSA and his team for providing necessary facilities to complete this work at SAC.

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INTRODUCTION

Coastal zone is the area of interaction between land and sea. It includes both terrestrial as well as marine resources, which are renewable as well as non-renewable. In addition, interactions between various natural processes and human activities are important factors in the coastal area. India has a long shoreline of about 7500 km including its island territories. Coastal zone in India assumes its importance because of high productivity of its ecosystems, concentration of population, exploitation of natural resources, discharge of waste effluent and municipal sewage, development of various industries, increasing load on harbors, spurt in recreational activities and above all petroleum exploration activities.

The destruction and loss of land due to sea erosion is a severe problem, particularly for a country like India facing explosive population growth. 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. Beaches act as constant absorbers of the wave energy of water and though subject to small disturbances, remain in equilibrium. However, sometimes this equilibrium gets disturbed due to either natural phenomena or human intervention. When shore structures are constructed, it is quite likely that equilibrium condition is altered. Since this can cause considerable damage and reduce the effectiveness of such structures, it is necessary to study the equilibrium condition of shores before constructing such structures. Therefore, it is of utmost importance to get information on accreting, eroding and stable coasts so that effective measures to combat sea erosion may be taken.

Major concern of coastal zone management is to ensure a rational development of area and judicious use of its resources, which is consistent with the surrounding natural systems and environment. Environmentally effective policy decisions pertaining to coastal zone management depends upon accurate and comprehensive scientific data. A basic problem confronting our country is limited availability of geographic data on coastal zone. Accurate and updated scientific data is required on coastal wetlands/landform/land use, shoreline changes, sediment transport and water quality of near shore waters.

Satellite data have proved to be extremely useful in creating baseline inventory of the entire Indian shoreline at 1:250,000, 1:50,000 and 1:25,000 scale (Nayak et al. 1991, SAC, 2012). The prepared landuse/wetland maps show

wetland features between high and low water lines and land use features of the adjoining shore (up to 1.5 km from high waterline).

Coastal Protection and Development Advisory Committee (CPDAC) constituted by Ministry of Water Resources, Govt. of India in April, 1995 is the apex body responsible for formulating policies/ programmes, providing technical guidelines, monitoring, reviewing and co-ordinating coastal zone protection and developmental activities executed by different Central and State Departments along the Indian coastline. The committee recommended the need for preparation of Coastal Atlas showing information related to coastal erosion derived from satellite data and protection measures undertaken by all maritime states of India. A subcommittee was constituted for the purpose. The subcommittee met several times, discussed and finalised the contents of the Atlas. It was decided that shoreline change atlas of the entire Indian coast would be prepared based on Highest High Tide Line depicted on coastal landuse/landcover maps of 1989-91 and 2004-06 time-frame on 1:25,000 scale The baseline data has been generated under two projects funded by Ministry of Environment and Forests (MoEF) with Space Applications Centre, Ahmedabad as a nodal agency with active participation of several related Central & State Government Departments and Academic Institutes.

The entire database of coastal thematic maps prepared using satellite data for the period 1989-91 and 2004-06 time-frames has been digitised and put as part of Coastal Zone Information System (CZIS) in GIS environment developed at Space Applications Centre (ISRO), Ahmedabad. Coastal Zone Information System for entire India (CZIS-India) is developed to include and update all the coastal information viz. landuse, wetland, shoreline, coral reef etc. for all maritime states including Union Territories in ARC/INFO environment. The information is catalogued as per Survey of India topographical map indexing. This data has been used as a baseline data for preparing the shoreline change atlas of India.

The major task involved preparation of a digital shoreline change atlas in GIS environment using existing databases of coastal landuse/landcover maps prepared on 1:25,000 scale (1989-91 and 2004-06 time-frame), 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 tasks taken up are:

i. Quantify and classify the shoreline as shoreline under erosion, stable and accretion for all the maritime states by integrating shoreline using existing database of 1989-91 and 2004-06 period.

ii. Integrate the field information on coastal erosion and shoreline protection measures of all the maritime states of India in GIS environment.

iii. Analyse satellite data of 2011-12 period for selected hotspot areas (areas showing large shoreline changes) and understand coastal processes responsible for such changes.

iv. Generate Six Volumes of A-3 size coloured digital as well as hard copy Coastal Atlas of India (Volume 1 covering Gujarat, Daman & Diu, Volume 2 covering Maharashtra & Goa, Volume 3 covering Karnataka & Kerala, Volume 4 covering Tamilnadu, Puducherry & Andhra Pradesh, Volume 5 covering Odisha & West Bengal and Volume 6 covering Lakshadweep & Andaman & Nicobar islands).

DATA USED

Primarily, landuse/landcover maps on 1:25,000 prepared using IRS-P6 LISS-IV data of 2004-06 period and SPOT-1 & 2 Multispectral and IRS-1A & IRS-1B LISS-II data of 1989-91 period available at Space Applications Centre, Ahmedabad have been utilized. In few cases where suitable data were not available, the data of nearest time frame were used. These maps depict shoreline as Highest High Tide Line (HTL) and Low Tide Line (LTL). Shoreline changes with respect to Highest High Tide Line have been taken up for the present work. The entire database has been put in GIS environment as part of Coastal Zone Information System (CZIS) developed at Space Applications Centre (ISRO), Ahmedabad. Landsat TM, ETM and Resourcesat-1 AWiFS data of corresponding time frames was used for rechecking and confirming the continuity of HTL in adjoining map sheets. Status of coastal protection measures taken up by respective maritime states and UT were prepared in spatial format and were put in the GIS database.

List of the satellite data used is summarised in the Annexure-III (Table 3 to 6).

The status of coastal protection measures taken up by maritime states and UTs was provided by them through Central Water Commission (CWC), New Delhi. These were prepared in spatial format and were put in the GIS database. Details are provided in Annexure-III (Table 7 to 25).

METHODOLOGY

Following steps were undertaken:

i. The existing Coastal Zone Information System (CZIS) developed at Space Applications Centre (ISRO), Ahmedabad has been primarily used. Coastal landuse maps for the entire Indian coast prepared on 1:25, 000 scale for 1989-91 and 2004-06 time-frame available in CZIS have been used for shoreline change mapping.

ii. National Spatial framework from NRDB has been used for organizing and creating the database. The basic framework of CZIS-India is prepared for all maritime states and Union territories of India on 1:25,000 scale. One degree consists of 8X8 rectangular grids or cells. Each rectangular grid or cell represents one SOI topographic area on 1:25,000 scale (M.C Gupta et al., 2000).

iii. Spatial layer of Line (LN25) of 1989-91 time-frame (containing High Water Line, rail, road, drainage) has been taken from the CZIS database.

iv. Spatial layer of Line (LN25N) of 2004-06 (containing High Water Line, rail, road, drainage) has been taken from CZIS database.

v. Spatial layer of Point of habitation has been taken from CZIS database.

vi. Registration of two time-frame data sets considering rail, road and HTL of 1989-91 as base has been done.

vii. Output spatial layer showing shoreline changes using overlay of rectified coverage and base coverage is created.

viii. Maps were rechecked using Landsat TM, ETM, AWiFS and LISS-IV data to make it seamless in database.

ix. Polygons for areas under erosion and accretion were created.

x. 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).

xi. A table containing all the above statistics has been generated for each maritime state and U.T.

xii. Status of shoreline protection measures have been depicted as per the information provided by the maritime State/UT agencies through Central Water Commission.

xiii. A standard map composition and layout were finalised and have been used for final map composition of each map.

xiv. 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.

Accuracy Assessment: Classification as well as planimetric accuracy of the maps was assessed while carrying out the filed work. 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 Survey of India (SOI) standard.

xv. Hotspots were identified based on the magnitude of shoreline dynamics. Recent satellite images (2011-12) were acquired and analysed.

xvi. Finalised maps depicting shoreline changes were utilized for preparing shore line change Atlas of the Indian coast (Six Volumes). Volume 1 covers Gujarat, Daman & Diu, Volume 2 covers Maharashtra & Goa, Volume 3 covers Karnataka & Kerala, Volume 4 covers Tamilnadu, Puducherry & Andhra Pradesh, Volume 5 covers Odisha & West Bengal and Volume 6 covers Lakshadweep & Andaman & Nicobar islands. Digital Atlas in form of CD was prepared.

RESULTS

Lakshadweep Islands

The coral islands in the Arabian Sea known as Laccadive, Minicoy and the Amindivi islands previously were officially named Lakshadweep in November 1973. They lie about 200 to 470 kilometers off the Kerala coast within the geographic limits of 8^0 - 12^0 N latitude and 71^0-74^0 E longitude. The islands consist of a chain of well developed coral reefs. There are about 36 islands, out of these only 10 are inhabited. Other islands are small and exist as satellite of the inhabited islands. Kavaratti is the capital of the Union territory Lakshadweep. The geographic area of the islands is 32 sq. km. The islands are flat, rising 3-9 meters above the sea. Chetlat is one of the northern most islands. The Minicoy island is the southernmost island of this group, separated from the rest of islands by a stretch of a sea that is about 180 km wide and is known as the Nine degree channel.

The corals occur as atolls in which the coral reef formation appears annular or ring shaped in its plan view. An atoll is often topped by low sand islands, enclosing a lagoon. Almost all the atoll have NE-SW orientation with low lying islands on the east, a broad well developed reef on the west, with a lagoon in between, connected to the open ocean by one or more channels. The width of the lagoons varies from 1 to 4 km and most of the lagoons also have coral atolls arising from the lagoon. These atolls are rich in biodiversity harboring coral fauna over a hundred species. Small lagoons (of the Chetlat, the Kiltan, the Amini and the Kadmat islands) are virtually filled with sediments. Large lagoons (the Bitra, the Bangaram, the Suheli par and the Minicoy) are comparatively deep with central part of the lagoon being deeper. The margins of the lagoons are characterized by gravel and coarse sand. Shallow sandbanks bordering the reef are also covered by coarse sediments. The central region of the deeper lagoon is usually covered by fine sand and silt. Sand consists of entirely pure calcium carbonate, with very little silica, alumina or iron. The calcium carbonate from the sand has various uses such as in the manufacturing of cement and glass and also in the chemical and paper industry.

Sandy beach characteristically make up the coast of all the Lakshadweep islands. Sand is medium to coarse grained and coralline in nature. Sandy beach is discontinuous on the Baliyapaniyam, the Cheriyapaniyam and the Perumal par reef. The Chetlat Island is enclosed with the beach on its entire eastern side. The Bitra, the Kiltan, the Kadmat, the Amini, the Bangaram, the Tinnakara, the Parali, the Agatti, the Pitti, the Valiyakara and the Cheriyakara islets of the Suheli par are entirely surrounded by the beach. Beach is continuous on the eastern side and discontinuous on the western side and devoid of beach in the extreme north of the Kavaratti Island. The Minicoy has a J-shaped beach circling the entire island.

The shoreline of Lakshadweep islands is 136.28 km. It is observed that 72.03 km length of the Lakshadweep islands coast has eroded, 63.24 km has accreted and 1.01 km has been stable during the time frame 1989-91 and 2004-06 (Table-1, Fig. 1). The total area eroded is 1.70 sq km and area accreted is 0.83 sq km (Table-1). Details for each individual map sheet are provided in Table-1.

The smallest inhabited island of the Lakshadweep archipelago—Bitra (Map Sheet No. 49A02SE), shows mainly erosion along its entire coastal length of more than one kilometer. The other inhabited islands show both erosion and accretion. It has been observed that the erosion or accretion area is small but a larger length of coastline is affected. Amini (Map Sheet No. 49A12NE, 49A12SE), Kiltan (Map Sheet No. 49A15NE, 49E03NW), Minicoy, Kalpeni, Cheriyam, Androth, Kavaratti and Cheriyakara islands show greater erosion. For other islands--Chetlath, Kadmat, Bangaram, Tinnakara, Parali and Valiyakara islet and Agatti, accretion is predominant. Stable coastal stretches are observed for Kavaratti and Cheriyakara. Plate 1 shows the erosion and accretion for Chetlath Islands and the coastal dynamics of Agatti Island are shown in Plate 2. Plate 11-13 shows the coastal protection measures around Kavarati Islands. Plate 14 show the accretion near Boat jetty (West Side), Kavaratti, Lakshadweep.

Table-1: Map sheet wise results of shoreline changes for 1999-2000 and 2004-06 time-frame for Lakshadweep islands.

Sr. No.	Map sheet no. (Island name)	Erosion area (sq.km)	Erosion length (km)	Accretion area (sq.km)	Accretion length (km)	Stable length (km)
1	49A02SE (Bitra)	0.04	1.26	0.00	0.00	0.00
2	49A10NE (Chetlath)	0.01	0.98	0.07	4.61	0.00
3	49A12NE (Amini)	0.05	2.31	0.01	1.03	0.00
4	49A12SE (Amini)	0.02	1.80	0.02	1.64	0.00
5	49A15NE (Kiltan)	0.01	0.41	0.00	0.16	0.00

6	49E03NW (Kiltan)	0.04	4.08	0.03	2.76	0.00
7	49A15SW (Kadmat)	0.02	1.13	0.01	1.18	0.00
8	49A16NW (Kadmat)	0.05	5.41	0.17	11.24	0.00
9	49B01NE (Agatti)	0.01	0.76	0.01	0.62	0.00
10	49B01SE (Agatti)	0.08	7.08	0.12	9.07	0.00
11	49B05NW (Bangaram, Tinnakara and Parali Islet)	0.07	3.60	0.07	5.54	0.00
12	49B08NW (Valiyakara Islet)	0.02	1.40	0.02	1.54	0.00
13	49B08SW (Cheriyakara Islet)	0.02	2.08	0.00	0.17	0.71
14	49B10SE (Kavaratti)	0.22	7.06	0.06	1.90	0.00
15	49B10SW (Kavaratti)	0.14	2.47	0.00	0.44	0.30
16	49F09SE (Androth)	0.57	9.70	0.00	0.48	0.00
17	49F12NE (Cheriyam)	0.04	2.73	0.06	3.58	0.00
18	49F12SE (Kalpeni)	0.09	5.65	0.08	7.53	0.00
19	49H03SW (Minicoy)	0.21	12.13	0.10	9.73	0.00
	TOTAL:	1.70	72.03	0.83	63.24	1.01

Figure 1 shows the accreting length, eroding length and stable shoreline of the Lakshadweep coast.

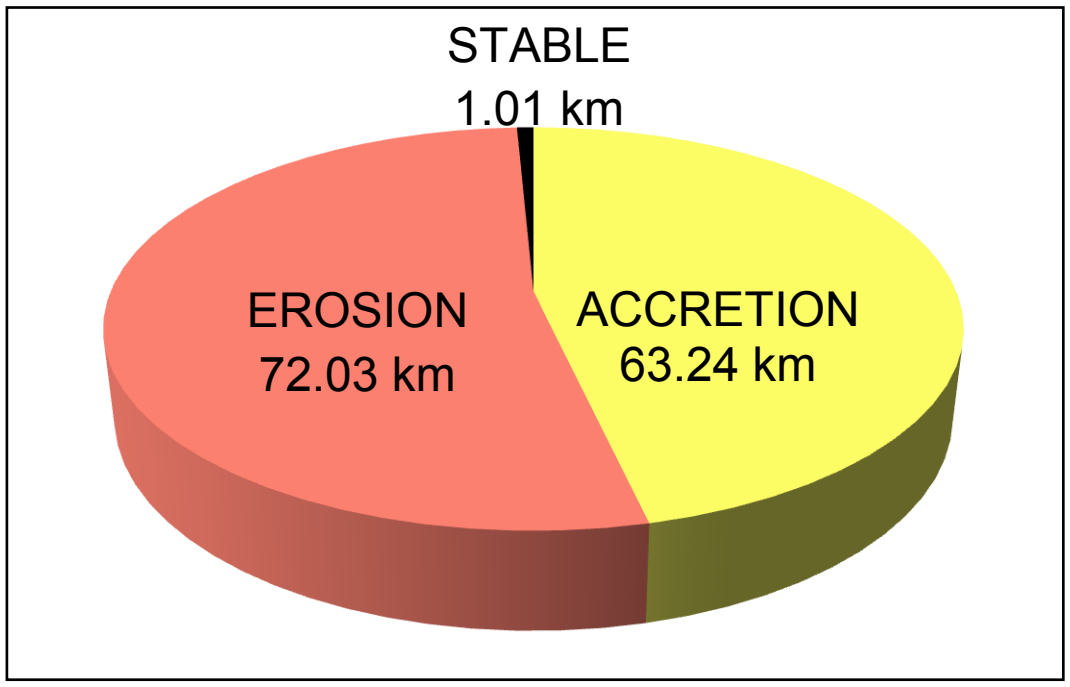


Figure 1: Status of coastal erosion, accretion and stable length of Lakshadweep coast (The total length of the coast is 136.28 km).

Andaman and Nicobar Islands

The Andaman and Nicobar islands group is the largest archipelago system in the Bay of Bengal, consisting of more than 350 islands. Only about 38 islands are inhabited. It lies within the geographical coordinates 10° 30'-13° 40' N and 92° 00'- 94° 00' E (Andaman group) and 06° 30'- 09° 30' N and 92° 30' - 94° 00' E (Nicobar group). The general orientation of the islands is north-south. The total land area of the islands is about 8500 sq km. Together these two groups constitute a Union Territory (U.T.) of India. These groups of islands are the emerged part of a mountain chain and lie on a ridge which extends southward from the Irrawady delta area of Burma. The Andaman group of islands is separated from the Nicobar group of islands by the Ten Degree Channel. These islands are endowed with natural beauty and have extremely rich biodiversity.

On the Andaman and Nicobar islands, there are many small tidal estuaries, long inlets and lagoons which support a dense and diverse mangrove flora. The tidal creeks of Andaman and Nicobar islands often form the outlets to the rain-fed stream that flow from the interior and carry silt to the shore to form muddy plains facilitating the spread and regeneration of mangroves. The islands alone account for about 18% of the country's total mangrove area. The mangrove flora of the Andaman group of islands comprises of 27 species and that of Nicobar group of islands comprises of 10 species. The dominant mangrove species are *Rhizophora mucronata and R. stylosa* and the co-dominant is *Bruguiera gymnorrhiza*.

The shoreline of Andaman has been divided into North, Middle, South and Little Andaman. In addition to main islands, the Andamans have a number of offshore islands e.g. Ritchie's archipelago (on the east of the main land), North Sentinel (west of the mainland), Coco island (north of the mainland) etc. and several coral pinnacles or patch reefs without any sizable island at all.

The shoreline of Andaman Islands is 1722.04 km (It does not include length of mouth of estuary, rivers, creeks and their inner parts). It is observed that 740.37 km length of the Andaman Islands has eroded, 944.84 km has accreted and 36.83 km has been stable during the time frame 1989-91 and 2004-06 (Table-2, Fig. 2). The total area eroded is 17.93 sq km and area accreted is 27.09 sq km (Table-2). Details for each individual map sheet are provided in Table-2.

The Landfall Island (Map Sheet No. 86C14NE, 86G02NW), East Island (Map Sheet No. 86G02NW), West Island (Map Sheet No. 86C14SE), Pocock Island (Map Sheet No. 86G02SW), Reef Island (Map Sheet No. 86C14SW, SE), Paget Island & Point Island (Map Sheet No. 86C15NW), North Reef Island (Map Sheet No. 86C12SE), Table Islands (Map Sheet No. 86G03NW), Turtle

Islands (Map Sheet No. 86G03SW) are some of the offshore smaller islands around North Andaman Mainland. These islands show erosion and accretion in small pockets.

The mainland North Andaman shows many creeks and small bays. The western side of the North Andaman is fringed with several creek systems and the erosion and accretion are found in small patches. Accretion is seen mainly in Map Sheet No. 86C14SE, 86C15NE, 86G03NW, 86C16SE and 86D13NE. Erosion is seen primarily in Map Sheet No. 86G03NW, 86C16SW, 86D13NE. A long stretch of straight coastline is found in the eastern side of North Andaman coast in Map Sheet No. 86G02SW, 86G04NW and 86G04SW. These coastline exhibits more or less stable nature. Interview Island (Map Sheet No. 86D09NE and 86D09SE) is a large island west of the mainland Andaman showing more or less stable nature with patches of accretion and erosions near the indented coastline.

Middle Andaman include Anderson Island (Map Sheet No. 86D09SE), Spike Island (Map Sheet No. 86D11SE) and smaller islands like Flat Island (Map Sheet No. 86D10SE), Hump Island, Mask Island (Map Sheet No. 86D10NE), Boper, Speke Islands (Map Sheet No. 86D13SE) along the western side of the mainland and Porlob Island, Long Island (Map Sheet No. 86D15NE), Guitar Island, Passage Islands (Map Sheet No. 86D15SE), Barren Island (Map Sheet No. 86D15SW), Colebrooke Island, Strait Island (Map Sheet No. 86D16NE) and smaller islands like Button Islands (Map Sheet No. 86H03SW) along the eastern side of the main island. Like north Andaman, the middle Andaman is also indented with creeks and small bays and the erosion and accretions are found in small patches. Accretions are mainly observed in Map Sheet No. 86D15NE, 86D15SE and 86D16NE. Accretions along the western coast of Long Island are shown in Plate no. 3. Large eroding coastlines are observed in Map Sheet No. 86D09SE and 86D13SE. The long stretch of straight coastline found in Map sheet No. 86D10SE, 86D11NE and 86D11SE along the western coast is of more or less stable in nature. The straight stretch of coast along the eastern side of the middle Andaman coast (Map Sheet No. 86D14SE and 86D14NE) is also found to be in a stable condition. The coastal dynamics around the Strait Islands are shown in Plate no. 4.

Apart from the main island the south Andaman Islands consists of Wilson Island, (Map Sheet No. 86D16NE) Henry Lawrence Island, East Island (Map Sheet No. 86H04NW), Nicholson Island, Peel Island (Map Sheet No. 86D16SE), Havelock Island (Map Sheet No. 86D16SE, 86H04SW, 87A13NE and 87E01NW), KYD Island (Map Sheet No. 87A13NW), Neil Island, Sir Hugh Rose Island (Map Sheet No. 87E01SW) and Ross Island (Map Sheet No. 87A14NW) along the eastern side of the main land. Defence Island (Map

Sheet No. 87A09NW), North Sentinel Islands (Map Sheet No. 87A02SE, 87A06SW), Tarmugli Island, Red Skin Island, Alexandra Island, Boat Island and Malay Island (Map Sheet No. 87A10SW) are towards the western side of the main land. Rutland Island (Map Sheet No. 87A11NW, 87A11NE, 87A11SW and 87A11SE) and Cinque Islands, Passage and Sister Islands (Map Sheet No. 87A12NE) towards the south of the mainland is also included within the south Andaman Island group. Accretion and erosion trends of the south Andaman is similar to that of the north and middle Andaman, where the both erosion and accretions are observed in pockets along the coast near to creeks or bays. Significant accretions are observed in (Map Sheet No. 86H04SW, 87A10NE, 87A10SW and 87A10SE). Plate no. 5 shows the erosion to the south of Havelock Island. The coastal dynamics and the coastal habitat of Havelock Island is shown in Plate 15-16. The straight coast along the eastern side of south Andaman shows more or less stable coast (Map Sheet No. 87A13NW, 87A13SW, 87A14NW, 87A10SE and 87A14SW). The coastal dynamics of Port Blaire is shown in Plate no. 6. The mangroves around Baratang Island are shown in Plate no. 17.

South Sentinel Island (Map Sheet No. 87B01NE), Brother Island (Map Sheet No. 87B09NW, 87B09NE) and the little Andaman constitute the group of little Andaman. Among the sub divisions of Andaman, only little Andaman is observed to have large area of eroding coast when compared with the area under accretion. The entire coast is observed to be more or less stable with slight erosion near the south bay (Map Sheet No. 87B06SE) and slight accretion near the hut bay (Map Sheet No. 87B10SW). The coastal dynamics along the eastern coast of South Andaman Island is shown in Plate no. 7.

The Ten Degree Channel separates the Andaman group of islands from the Nicobar group of islands. The effect of December-2004 tsunami is observed to have less effect in Andaman compared to the Nicobar Islands. The islands are secluded and the natural processes are dominant with little external disturbance.

Table-2: Map sheet wise results of shoreline changes for 1989-91 and 2004-06 time-frame for Andaman Islands.

Serial No.	Map no.	Erosion area (in Sq Km)	Erosion length (in Km)	Accretion area (in Sq Km)	Accretion length (in Km)	Stable (in Km)
1	86C14NE	0.01	0.51	0.31	6.33	0.00
2	86G02NW	0.10	4.16	0.77	18.53	0.74
3	86C14SW	0.03	1.12	0.01	0.65	0.00
4	86C14SE	0.37	10.66	1.39	22.34	0.00
5	86G02SW	0.58	11.56	0.24	8.89	2.03
6	86C15NW	0.22	6.47	0.36	10.23	0.00
7	86C15NE	0.26	8.12	1.21	18.57	0.00
8	86G03NW	0.32	14.44	1.18	27.39	0.00
9	86C15SW	0.20	8.29	0.42	15.43	0.00
10	86C15SE	0.03	1.51	0.38	6.95	0.00
11	86G03SW	0.54	25.86	0.84	38.65	0.00
12	86C16NW	0.32	13.44	0.31	13.98	0.00
13	86G04NW	0.18	5.90	0.09	4.00	5.45
14	86C12SE	0.04	1.66	0.02	1.51	5.32
15	86C16SW	0.51	10.19	0.29	8.58	0.00
16	86C16SE	0.43	11.03	1.12	20.13	0.00
17	86G04SW	0.09	4.20	0.04	2.47	7.37
18	86D09NE	0.41	13.88	0.39	12.54	5.06
19	86D13NW	0.19	6.94	0.32	10.80	0.00
20	86D13NE	1.47	35.88	1.81	41.87	0.00
21	86H01NW	0.02	1.28	0.05	2.37	0.00
22	86D09SE	0.72	25.12	1.34	33.63	4.67
23	86D13SE	0.71	17.29	0.09	4.20	0.00
24	86D10NE	0.26	16.98	0.29	15.85	0.00
25	86D14NE	0.10	7.50	0.24	13.11	0.00
26	86D10SE	0.18	12.86	0.15	10.87	0.00
27	86D14SE	0.09	6.18	0.11	7.66	0.00
28	86D11NE	0.13	8.31	0.15	9.51	0.00
29	86D15NE	0.35	16.33	0.47	20.80	0.00
30	86D11SE	0.46	18.75	0.39	15.77	0.00
31	86D15SE	0.38	22.95	0.47	24.36	0.00
32	86H03SW	0.02	0.99	0.02	1.33	0.00
33	86D12NE	0.38	12.64	0.53	17.42	0.00
34	86D16NW	0.08	4.34	0.18	9.56	0.00
35	86D16NE	0.37	19.50	0.51	23.07	0.00
36	86H04NW	0.39	20.75	0.67	28.24	0.00
37	86H04NE	0.00	0.52	0.01	0.60	0.00
38	86H15SW	0.21	11.37	0.15	9.66	0.00
39	86D12SW	0.03	1.34	0.07	2.85	0.00
40	86D12SE	0.06	3.86	0.10	4.78	0.00
41	86D16SW	0.10	6.65	0.51	20.18	0.00
42	86D16SE	0.35	14.06	0.44	13.86	0.00
43	86H04SW	0.40	14.66	0.69	25.24	0.00

44	87A09NW	0.24	15.24	0.57	14.23	0.00
45	87A09NE	0.27	10.05	0.28	12.42	0.00
46	87A13NW	0.08	7.84	0.27	19.96	0.00
47	87A13NE	0.18	7.27	0.11	5.43	0.00
48	87E01NW	0.30	14.30	0.26	12.25	0.00
49	87A09SW	0.13	5.94	0.24	11.43	0.00
50	87A13SW	0.10	6.04	0.20	10.05	0.00
51	87E01SW	0.21	8.65	0.40	13.92	0.00
52	87A10NW	0.23	8.41	0.36	13.00	0.00
53	87A10NE	0.48	18.96	0.77	23.62	0.00
54	87A14NW	0.12	8.98	0.19	12.06	0.00
55	87A02SE	0.20	4.19	0.24	6.71	0.00
56	87A06SW	0.24	5.69	0.15	3.19	0.00
57	87A10SW	0.67	25.68	0.91	32.90	0.00
58	87A10SE	0.27	13.47	0.75	24.74	0.00
59	87A14SW	0.01	1.54	0.03	1.86	0.00
60	87A11NW	0.14	8.06	0.16	8.85	0.00
61	87A11NE	0.44	20.14	0.48	20.98	0.00
62	87A11SW	0.11	4.13	0.04	3.31	0.00
63	87A11SE	0.20	11.87	0.58	26.09	0.00
64	87A12NE	0.15	3.72	0.04	2.69	0.00
65	87B01NE	0.05	2.15	0.02	1.09	0.94
66	87B05NE	0.00	0.00	0.00	0.00	1.65
67	87B09NW	0.11	3.66	0.02	3.55	0.00
68	87B09NE	0.00	0.00	0.00	0.00	3.59
69	87B05SE	0.11	9.76	0.16	10.23	0.00
70	87B09SW	0.12	9.82	0.14	7.43	0.00
71	87B06NE	0.08	6.21	0.17	10.28	0.00
72	87B10NW	0.09	10.38	0.10	9.00	0.00
73	87B06SE	0.36	18.17	0.10	8.70	0.00
74	87B10SW	0.14	9.96	0.19	10.14	0.00
	Total	17.93	740.37	27.09	944.84	36.83

Figure 2 shows the accreting length, eroding length and stable shoreline of the Andaman islands.

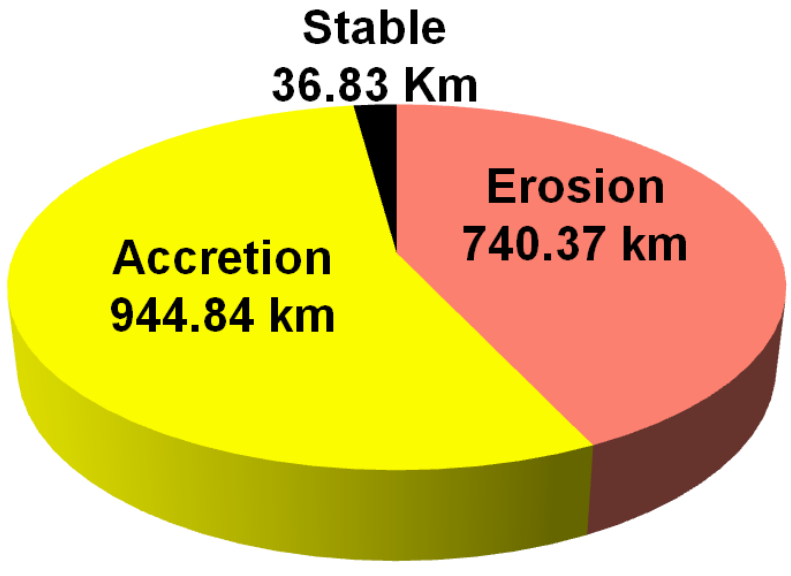


Figure 2: Status of coastal erosion, accretion and stable nature of Andaman Islands (Total coastal length of 1722.04 km does not include length of mouth of estuary, rivers, creeks and their inner parts).

The Nicobar groups of islands consist of three main clusters—the Car Nicobar, Middle Nicobar and Great Nicobar. A major part of the Great Nicobar Island has been declared a biosphere reserve. Linear and narrow sandy beaches make up of the coast of almost all the islands and the mainland of Andaman and Nicobar group of islands. Prominent and wider beaches surround the entire Little Andaman Island. Sandy beaches vary from island to island in their size. The coral reefs of the Andaman and Nicobar group of islands are of fringing type, often separated from the shore by a lagoon. Extremely diverse and biologically rich coral fauna is present here. Almost all the islands of the Andaman and Nicobar group exhibits, narrow, linear and fringing type of reefs.

The shoreline of Nicobar Islands is 777.63 km (It does not include length of mouth of estuary, rivers, creeks). It is observed that 690.10 km length of the Nicobar Islands has eroded, 68.30 km has accreted and 19.23 km has been stable during the time frame 1989-91 and 2004-06 (Table-3, Fig. 3). The total area eroded is 94.72 sq km and area accreted is 0.77 sq km (Table-3). Details for each individual map sheet are provided in Table-3.

The tsunami had its devastating effect all over the Nicobar Islands. Car Nicobar Island (Map Sheet No. 87C15SW, 87C12NE, 87C12SE, 87C16NW and 87C16SW) lost around 50 sq. km of its area due to tsunami. The eastern part of the island had its minimal changes while along the northern, western and southern coast, large area of land had been lost. The plate nos. 8-10 shows the coastal changes around the Ca-Nicobar Islands. The Tillanchang Island (Map Sheet No. 87H10SW, 87H10SE, 87H11NW and 87H11NE) is observed to have a more or less stable coastline with minimum effect of the tsunami. Erosions are observed along the Chowra Islands, Tarasa Islands and Bopoka Islands (Map Sheet No. 87H03NW, SW and SE, 87H04NW and 87H04NE).

A large area of Katchall Island (Map Sheet No. 87H08SW, 87H08SE, 8E05NW, NE and SE) have eroded due to the tsunami waves, where around 50 sq.km of area got washed away under tsunami at west bay (Map Sheet No. 88E05NW) and east bay (Map Sheet No. 88E05NE).

The northern region of the Camorta Islands (Map Sheet No. 87H08NE, and 87H12NW) was also observed to be devastated under the tsunami waves. A large area (~ 35 sq.km) of Trinkat Island (Map Sheet No. 87H12SW) got eroded making the long island to form into a group of smaller islands while the southern part of Nancowry Islands (Map Sheet No. 88E09NW) remained to be unaffected by the tsunami waves. The northern part of Little Nicobar Island (Map Sheet No. 88E11NE and 88E11SE) has been observed to be affected by the tsunami waves while along the other parts of the island major changes were not observed.

The Great Nicobar Island the southernmost land of Indian Territory also had undergone severe erosion under tsunami. Around 55 sq.km of the area had been washed away, mainly in the northern and the western parts of the island. The results show that large area of erosion due to tsunami was observed along coasts near to the creeks, inlets and bays. The western region of the islands had been severely damages compared to the eastern coast of the islands.

Table-3: Map sheet wise results of shoreline changes for 1989-91 and 2004-06 time-frame for Nicobar Islands.

Serial No.	Map no.	Erosion area (in Sq Km)	Erosion length (in Km)	Accretion area (in Sq Km)	Accretion length (in Km)	Stable (in Km)
1	87C15SW	0.03	1.19	0.00	0.00	0.00
2	87C12NE	0.37	13.62	0.02	2.48	0.00
3	87C16NW	1.23	27.56	0.00	0.67	1.33
4	87C12SE	0.11	2.04	0.00	0.00	0.00
5	87C16SW	0.20	5.07	0.00	0.08	0.00
6	87H03NW	0.38	7.47	0.00	0.00	1.08
7	87H10SW	0.13	10.29	0.05	6.34	2.30
8	87H10SE	0.03	2.71	0.01	1.52	0.00
9	87H11NW	0.08	9.24	0.05	8.82	1.99
10	87H11NE	0.02	4.98	0.02	3.72	1.93
11	87H03SW	0.94	17.31	0.13	5.26	0.00
12	87H03SE	0.40	10.09	0.00	0.33	1.51
13	87H04NW	0.29	4.87	0.00	0.38	0.00
14	87H04NE	1.67	25.74	0.01	1.28	0.00
15	87H08NE	2.38	22.22	0.00	0.11	0.00
16	87H12NW	0.98	17.94	0.01	1.03	0.00
17	87H08SW	0.51	7.65	0.01	1.41	0.00
18	87H08SE	0.55	18.88	0.05	2.61	0.00
19	87H12SW	3.03	41.38	0.07	4.88	0.00
20	88E05NW	16.28	25.71	0.00	0.00	0.00

21	88E05NE	6.02	32.98	0.07	3.82	0.00
22	88E09NW	0.42	19.09	0.03	2.91	1.12
23	88E05SE	0.02	0.93	0.03	1.14	0.00
24	88E10SW	0.07	3.54	0.00	0.17	1.86
25	88E11NE	2.29	43.98	0.02	3.08	0.00
26	88E11SW	0.07	3.62	0.00	0.69	0.00
27	88E11SE	0.94	28.76	0.05	5.64	5.09
28	88E12NE	11.39	47.23	0.03	2.45	0.02
29	88E16NW	2.42	31.86	0.07	4.18	0.00
30	88E16NE	0.28	8.78	0.01	1.31	1.00
31	88E12SE	10.82	48.19	0.00	0.00	0.00
32	88E16SE	2.41	31.16	0.00	0.15	0.00
33	88F09NE	3.81	13.08	0.00	0.00	0.00
34	88F12NW	7.63	11.74	0.00	0.00	0.00
35	88F13NE	1.62	30.77	0.01	1.69	0.00
36	88F13SW	12.65	33.82	0.00	0.00	0.00
37	88F13SE	2.22	24.60	0.00	0.15	0.00
	Total	94.72	690.10	0.77	68.30	19.23

Figure 3 shows the accreting length, eroding length and stable shoreline of the Nicobar Islands.

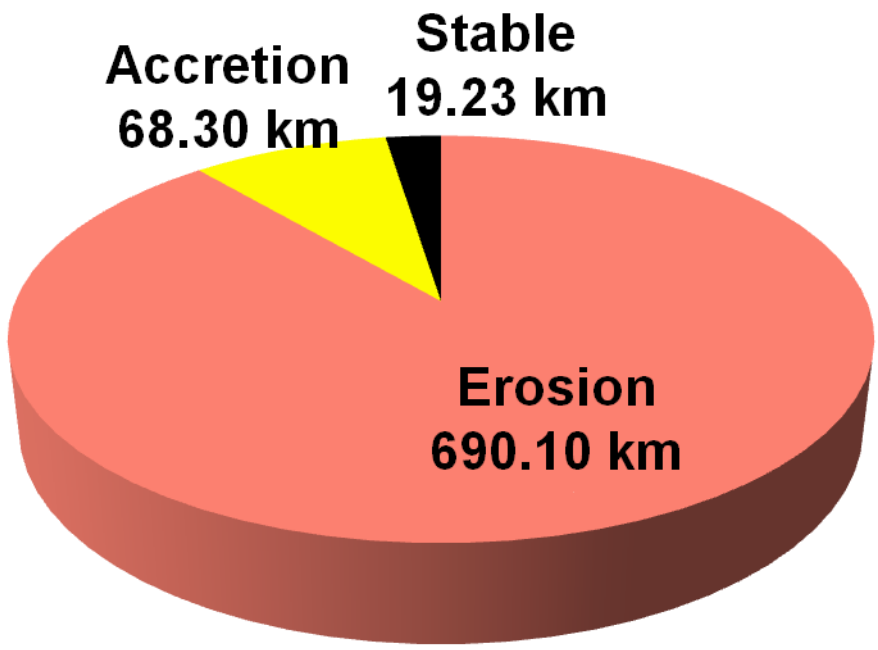


Figure 3: Status of coastal erosion, accretion and stable nature of Nicobar Islands (Total coastal length of 777.63 km does not include length of mouth of estuary, rivers, creeks and their inner parts).

END USE

The Atlas can be used as a reference material for obtaining information on status of shoreline changes during 1989-91 and 2004-06 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 Erosion 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.

REFERENCES

Gupta M.C., Murali O.M., Chauhan H.B., Mantri P., Oza S. R. and Shah H., 2000, *Coastal Zone Information Sysytem-Gujarat:* Technical Report, SAC/RESA/MWRD/TR/04/DECEMBER 2000 (Space Applications Centre, Ahmedabad), 39p.

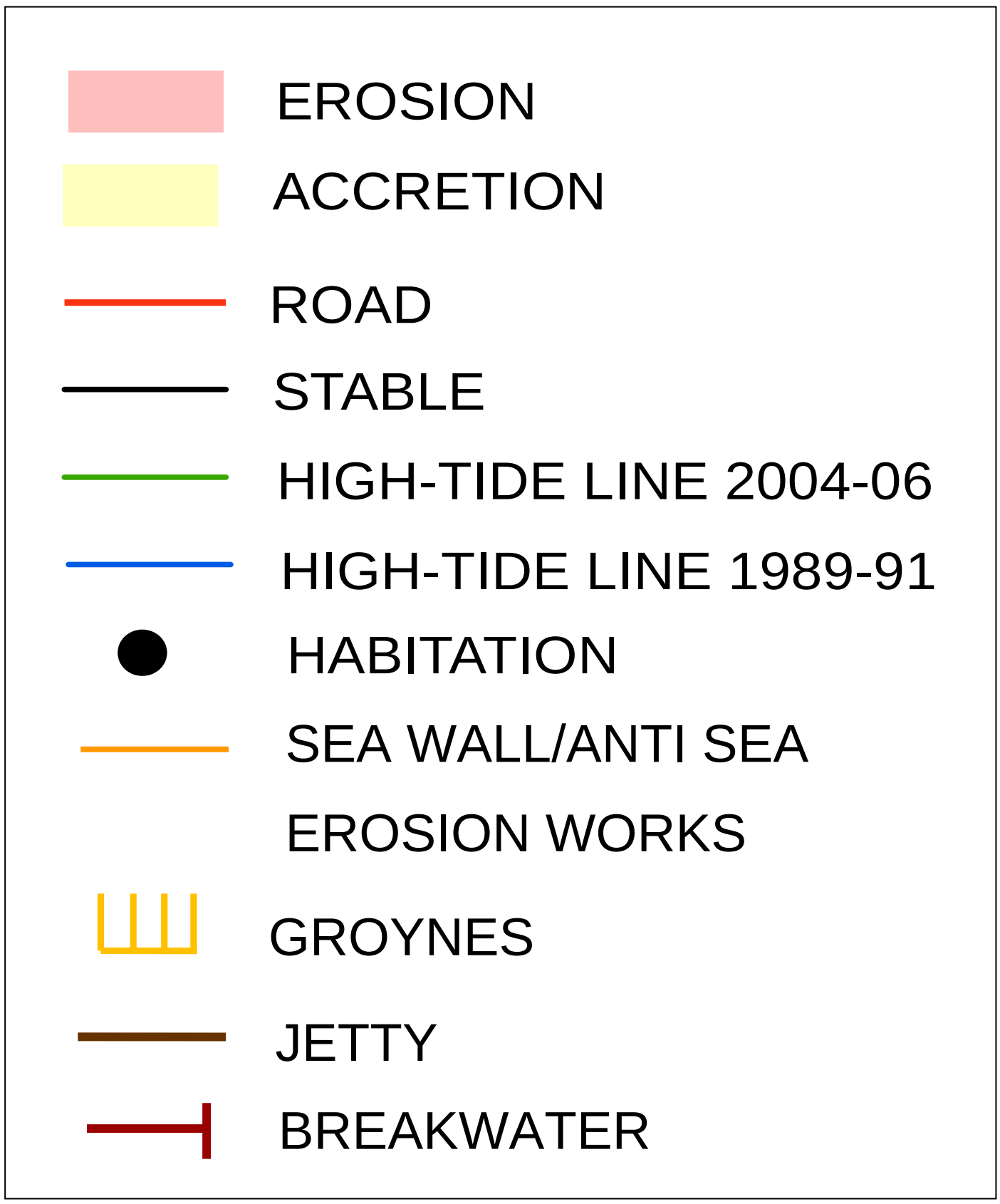
Nayak, S. R., Bahuguna, A., Shaikh, M., Rao, R. S., Trivedi, C. R., Prasad, K. N., Kadri, S. A., Vaidya, P. H., Patel, V. B., Oza, S. H., Patel, S. S., Rao, T. A., Shereiff, A. N. and Suresh, P. V., 1991, *Manual for mapping of coastal wetlands/landforms and shoreline changes using satellite data*: Technical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

SAC, 2012, *Coastal Zone of India*, Space Applications Centre (ISRO), 2012, 601 p. ISBN: 978-81-909978-9-8.

Annexure-I

(Shoreline Change Maps)

COMPLETE LEGEND TO SHORELINE CHANGE MAPS



SHORELINE CHANGE MAPS

LAKSHADWEEP ISLANDS

INDEX MAP FOR LAKSHADWEEP ISLANDS

49A10NE

49A2SE
BITRA
ISLAND

49A15NE49E3NW

49A15SW

49A12NE49A16NW

49A12SE

49B01NE49B5NW

49B01SE

49F9SE

KAVARATTI
ISLAND

49B10SW49B10SE

LAKSHADWEEP SEA

49B8NW

49B8SW

49F12NE

49F12SE

N

INDIA

LAKSHADWEEP
ISLANDS

MINICOY
ISLAND

49H3SW

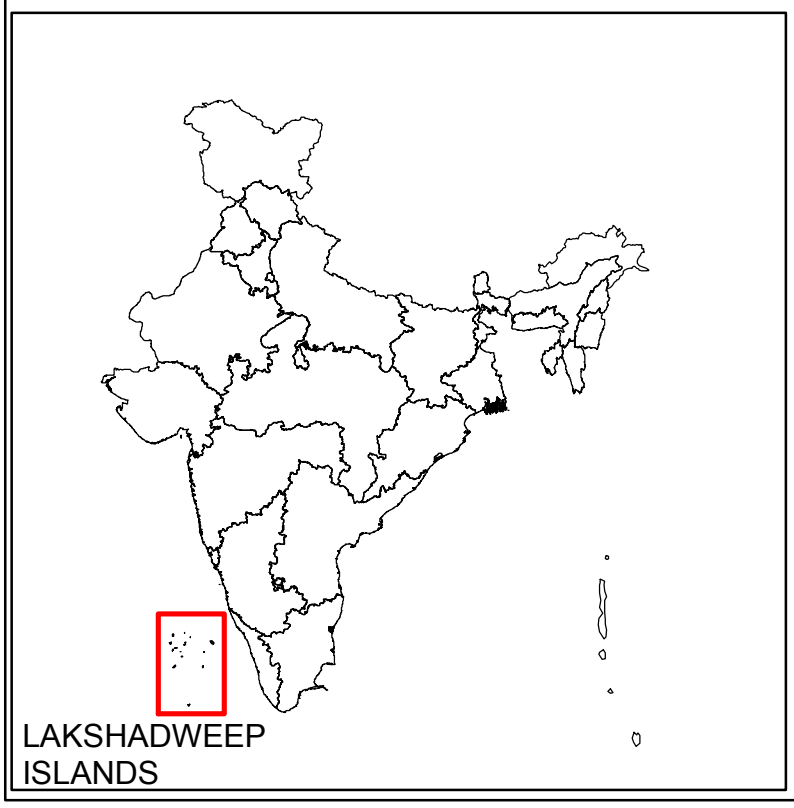
LAKSHADWEEP
ISLANDS

SHORELINE CHANGES FOR LAKSHADWEEP ISLANDS

BITRA ISLAND

KAVARATTI ISLAND

LAKSHADWEEP SEA



MINICOY ISLAND

N

LEGEND

ACCRETING COAST

ERODING COAST

STABLE COAST

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

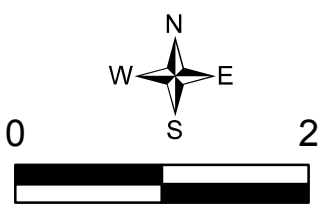
CHETLATH ISLAND

SHEET NO. 49A10NE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL



Scale in Km

INDEX TO SHEETS

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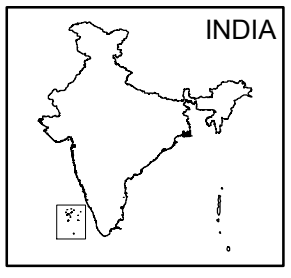
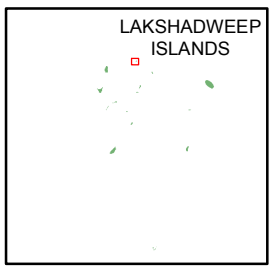
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

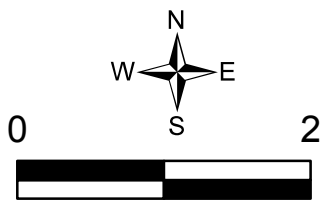
BITRA ISLAND

SHEET NO. 49A02SE

LAKSHADWEEP SEA

Legend

- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL



INDEX TO SHEETS

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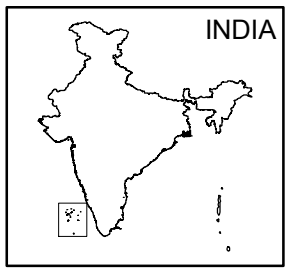
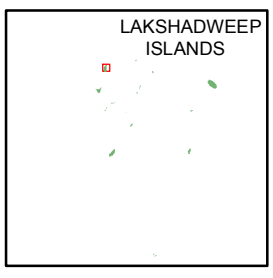
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

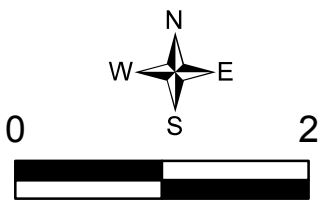
KILTAN ISLAND

SHEET NO. 49A15NE & 49E03NW

LAKSHADWEEP SEA

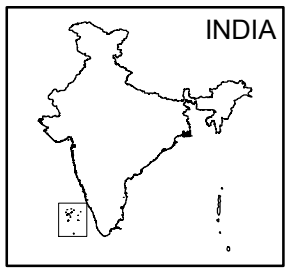
Legend

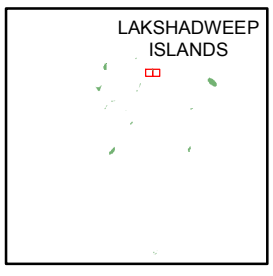
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL



INDEX TO SHEETS

SEA	SEA	SEA
SEA		
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

KADMAT ISLAND

SHEET NO. 49A15SW

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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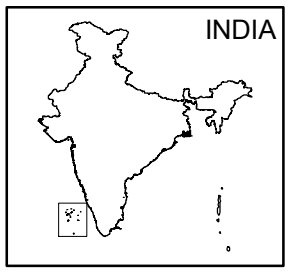
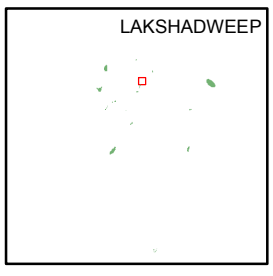
Scale in Km

INDEX TO SHEETS

SEA	SEA	49A15 NE
SEA		SEA
49A12 NE	49A16 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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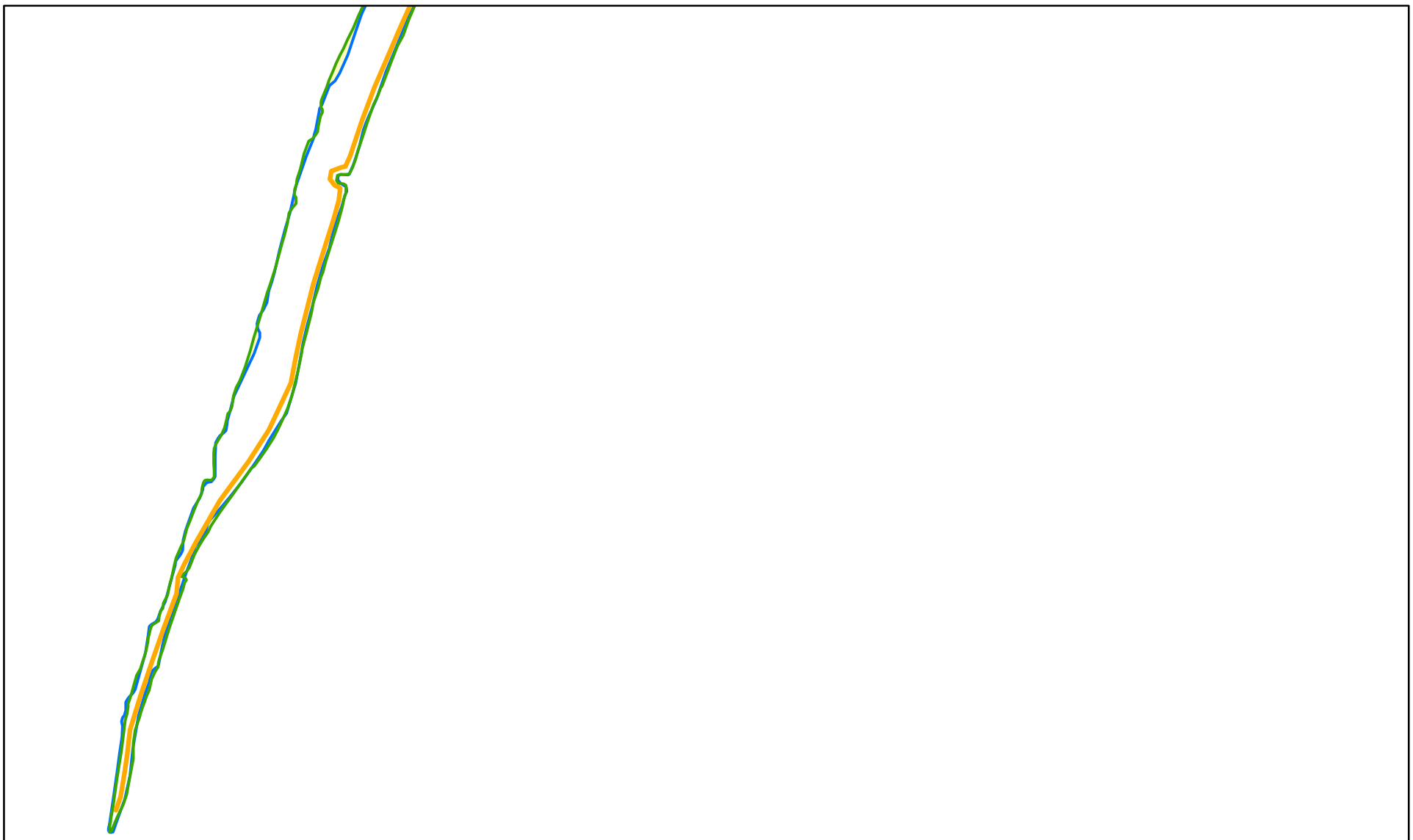
SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

KADMAT ISLAND

SHEET NO. 49A16NW



LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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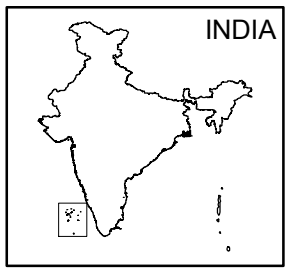
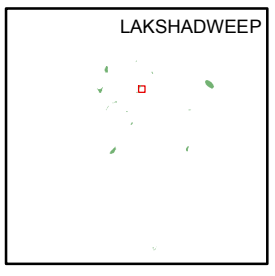
Scale in Km

INDEX TO SHEETS

SEA	49A15 SW	SEA
49A12 NE		SEA
49A12 SE	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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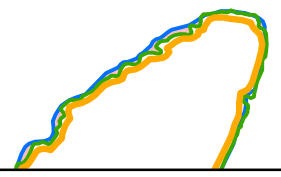
SHORELINE CHANGE MAP

FOR OFFICIAL USE ONLY

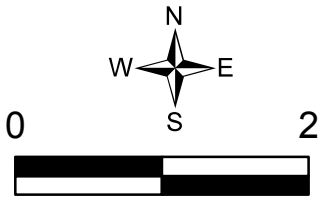
AMINI ISLAND **LAKSHADWEEP ISLANDS** SHEET NO. 49A12NE

LAKSHADWEEP SEA



Legend

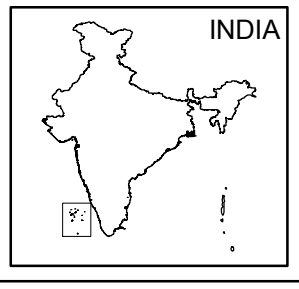
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

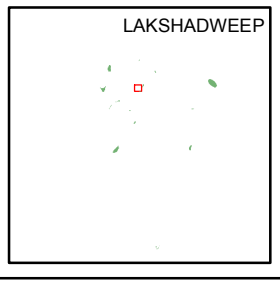


Scale in Km

INDEX TO SHEETS

SEA	SEA	49A15 SW
SEA		49A16 NW
SEA	49A12 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

LAKSHADWEEP

FOR OFFICIAL USE ONLY

AMINI ISLAND

SHEET NO. 49A12SE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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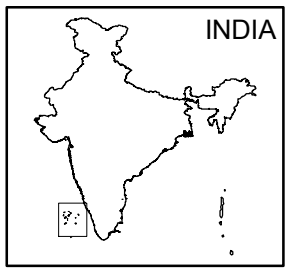
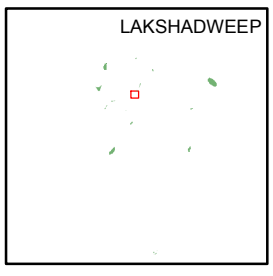
Scale in Km

INDEX TO SHEETS

SEA	49A12 NE	49A16 NW
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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AND CENTRAL WATER COMMISSION, NEW DELHI

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

AGATTI ISLAND

SHEET NO. 49B01NE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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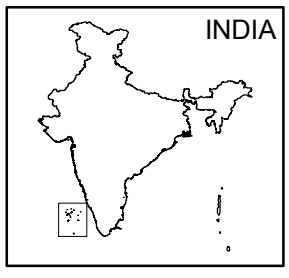
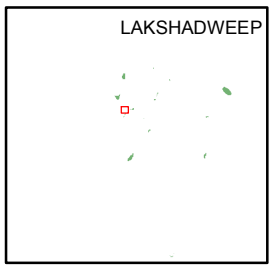
Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		49B05 NW
SEA	49B01 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

AGATTI ISLAND

SHEET NO. 49B01SE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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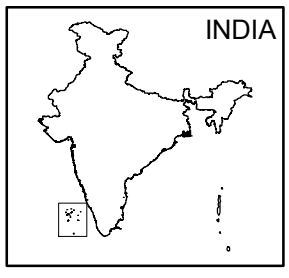
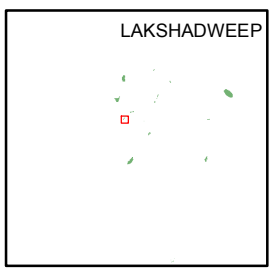
Scale in Km

INDEX TO SHEETS

SEA	49B01 NE	49B05 NW
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

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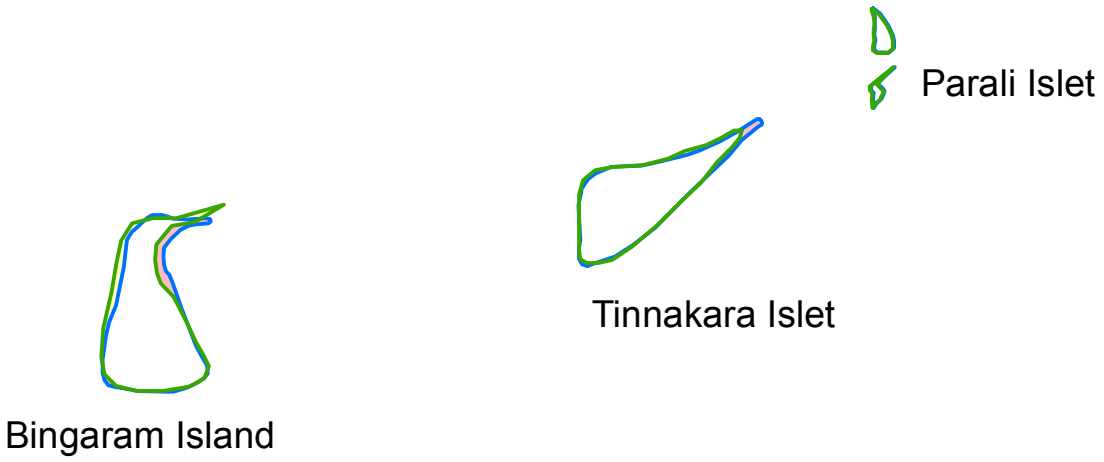
BINGARAM,TINNAKARA AND PARALI ISLAND

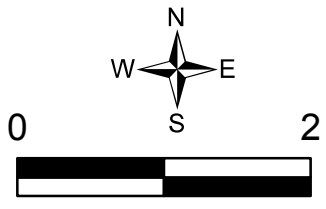
SHEET NO. 49B05NW



LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

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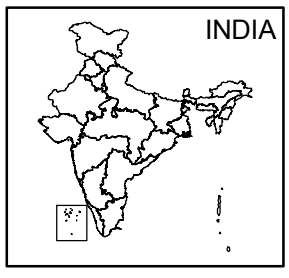
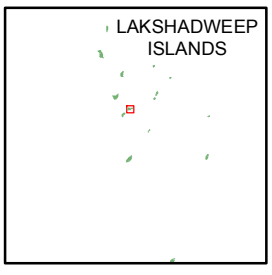
49B01 NE		SEA
49B01 SE	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

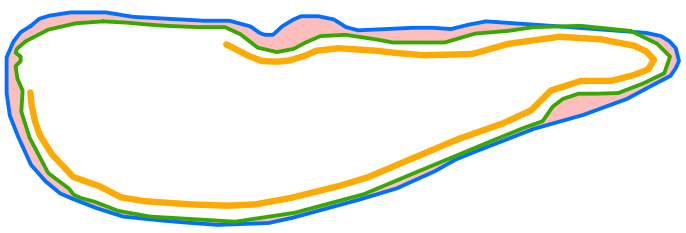
FOR OFFICIAL USE ONLY

LAKSHADWEEP ISLANDS

ANDROTH ISLAND

SHEET NO. 49F09SE

LAKSHADWEEP SEA



Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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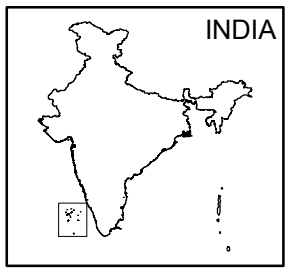
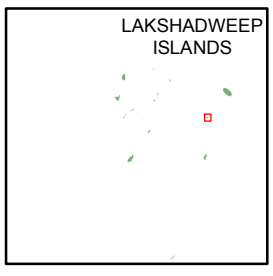
Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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SHORELINE CHANGE MAP

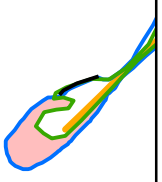
LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

KAVARATTI ISLAND

SHEET NO. 49B10SW

LAKSHADWEEP SEA



Legend

- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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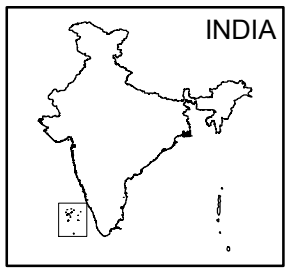
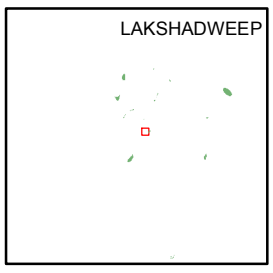
Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		49B10 SE
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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इसरो isro

SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

KAVARATTI ISLAND

SHEET NO. 49B10SE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

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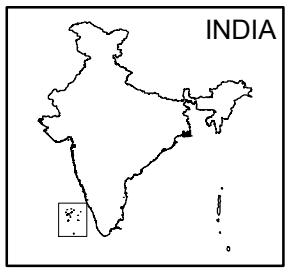
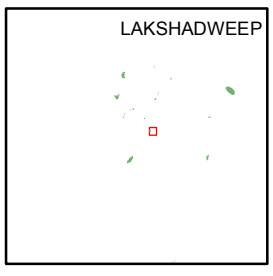
Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
49B10 SW		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

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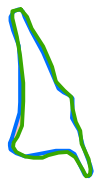
VALIYAKARA ISLAND

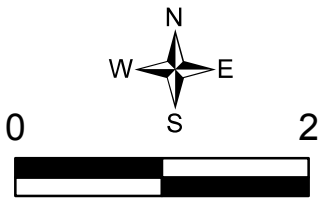
SHEET NO. 49B08NW

LAKSHADWEEP SEA



Legend

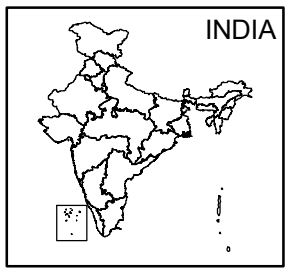
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

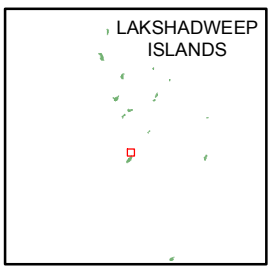


Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	49B08 SW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

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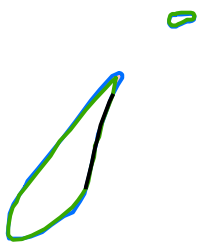
CHERIYAKARA ISLET

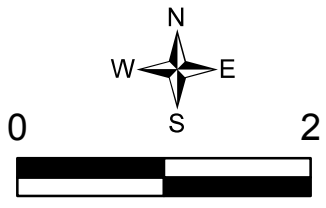
SHEET NO. 49B08SW

LAKSHADWEEP SEA



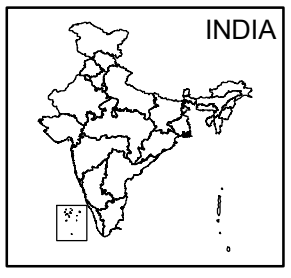
Legend

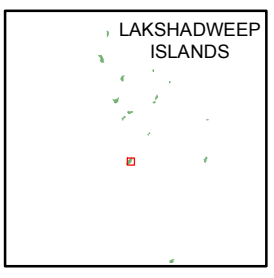
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	49B08 NW	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

CHERIYAM ISLAND

SHEET NO. 49F12NE

LAKSHADWEEP SEA

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

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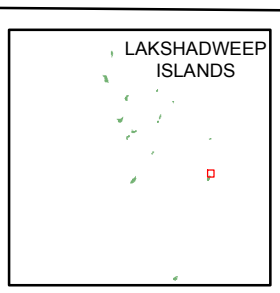
Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	49F12 SE	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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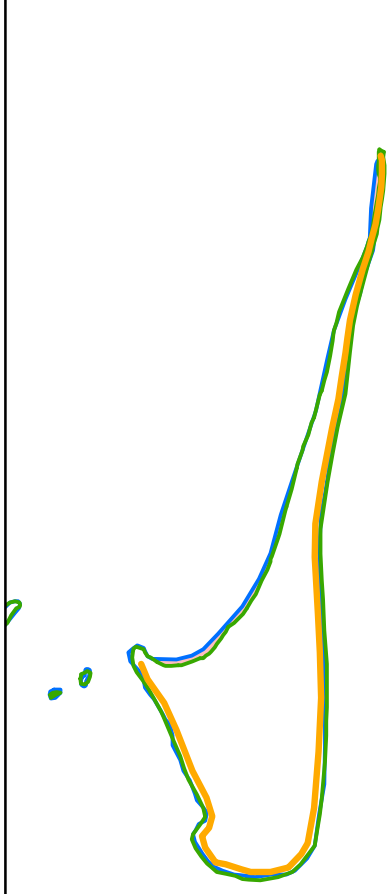
SHORELINE CHANGE MAP

LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

KALPENI ISLAND

SHEET NO. 49F12SE



LAKSHADWEEP SEA

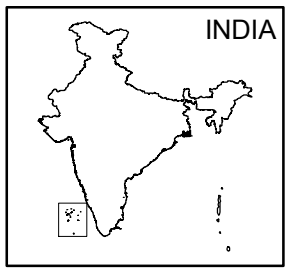
Legend

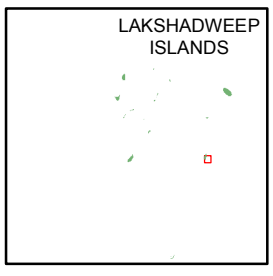
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

N
W E
S
0 2
Scale in Km

INDEX TO SHEETS

SEA	49F12 NE	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

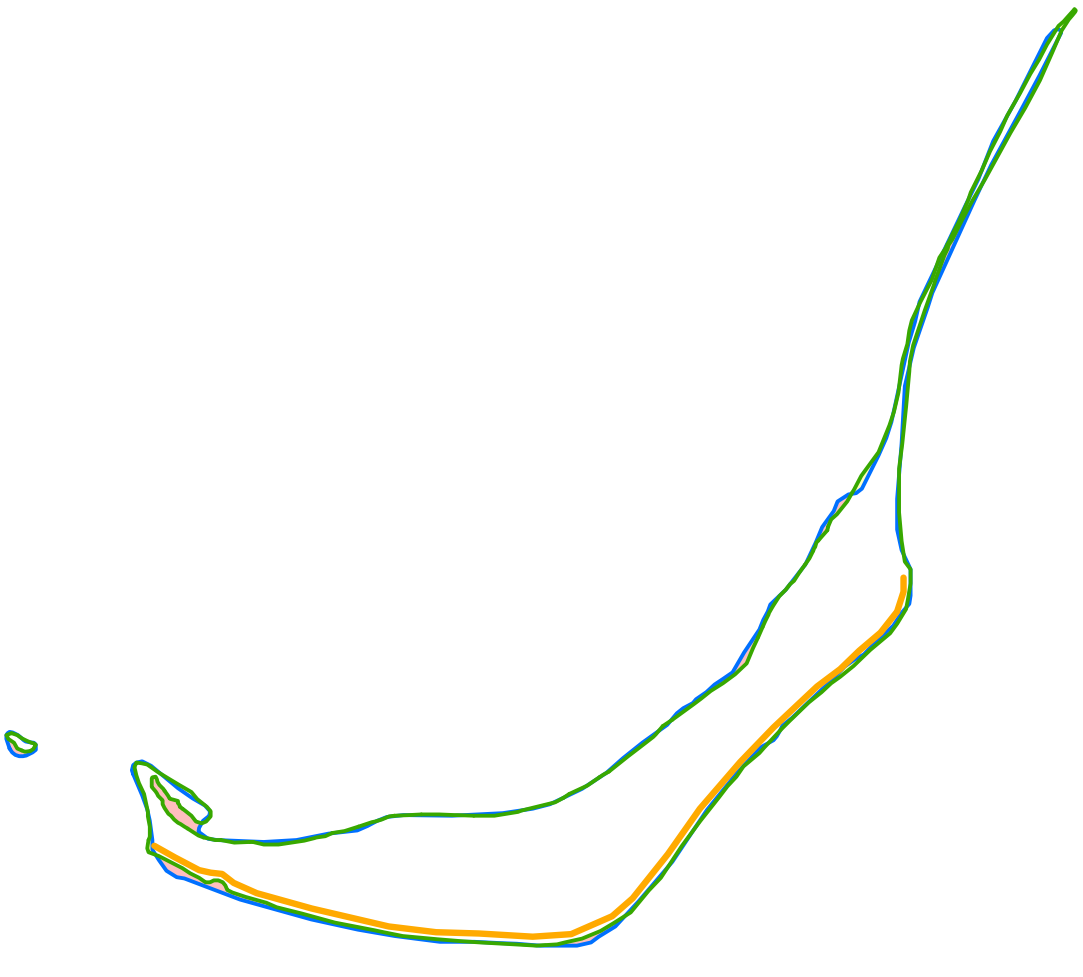
LAKSHADWEEP ISLANDS

FOR OFFICIAL USE ONLY

MINICOY ISLAND

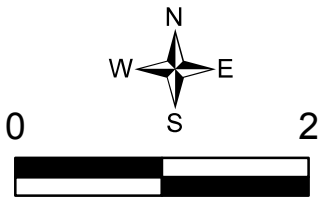
SHEET NO. 49H03SW

LAKSHADWEEP SEA



Legend

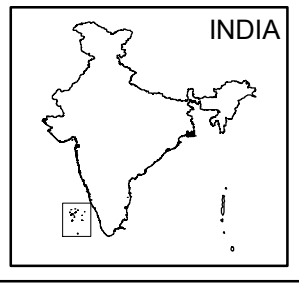
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEAWALL

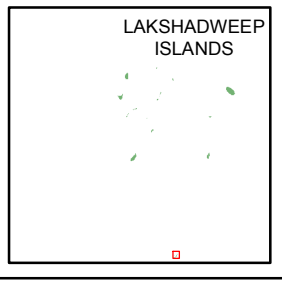


Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAPS

ANDAMAN & NICOBAR ISLANDS

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ANDAMAN ISLANDS

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86C15NW 86C15NE 86G03NW
86C15SW 86C15SE 86G03SW
86C16NW 86C16NE 86G04NW
86C12SE 86C16SW 86C16SE 86G04SW
86D09NE 86D13NW 86D13NE 86H01NW
86D09SE 86D13SW 86D13SE
86D10NE 86D14NW 86D14NE
86D10SE 86D14SW 86D14SE
86D11NE 86D15NW 86D15NE
86D11SE 86D15SW 86D15SE 86H03SW
86D12NE 86D16NW 86D16NE 86H04NW 86H04NE
86D12SW 86D12SE 86D16SW 86D16SE 86H04SW
87A09NW 87A09NE 87A13NW 87A13NE 87E01NW
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87A10NW 87A10NE 87A14NW
87A02SE 87A06SW
87A10SW 87A10SE 87A14SW
87A11NW 87A11NE
87A11SW 87A11SE
87A12NE
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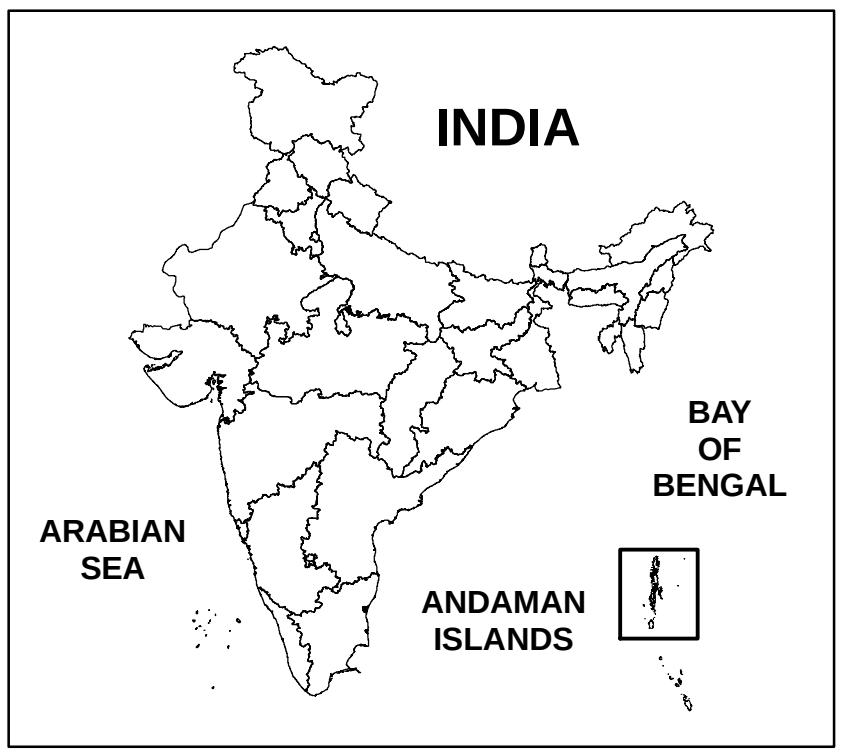
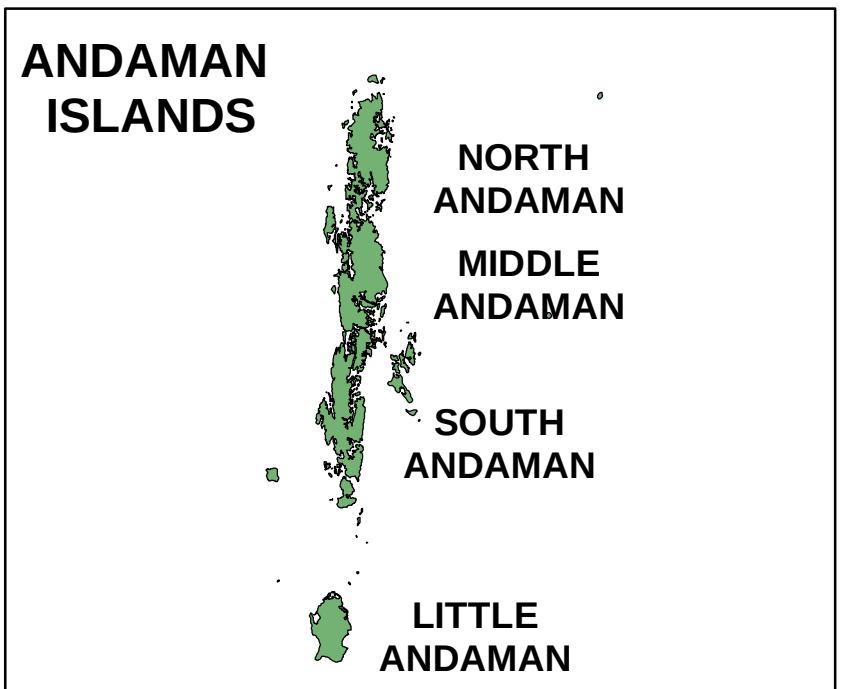
87B06SE 87B10SW





SHORELINE CHANGE
ANDAMAN ISLANDS

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NORTH
ANDAMAN

MIDDLE
ANDAMAN

SOUTH
ANDAMAN

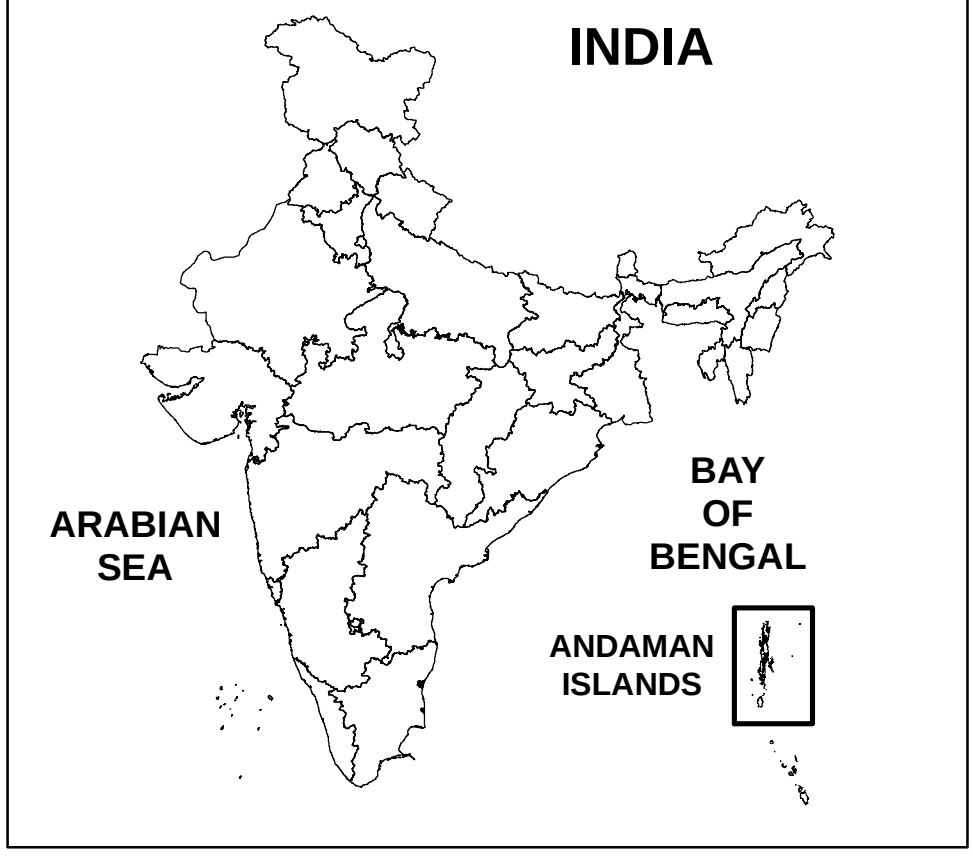
LITTLE
ANDAMAN

BAY
OF
BENGAL

ANDAMAN SEA

BARREN ISLAND

DUNCAN PASSAGE



ACCRETING COAST

ERODING COAST

STABLE COAST

HTL 2004-06

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

FOR OFFICIAL USE ONLY

SHEET NO. 86C14NE

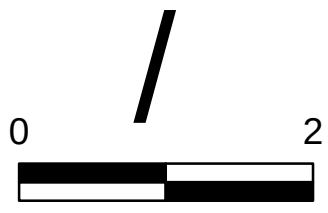
BAY

OF

BENGAL

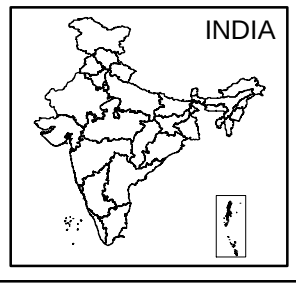
Legend

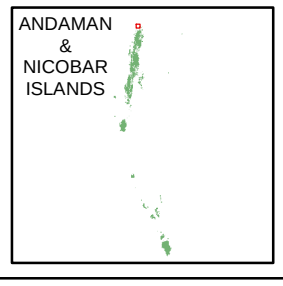
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	SEA	SEA
SEA		86G02 NW
86C14 SW	86C14 SE	86G02 SW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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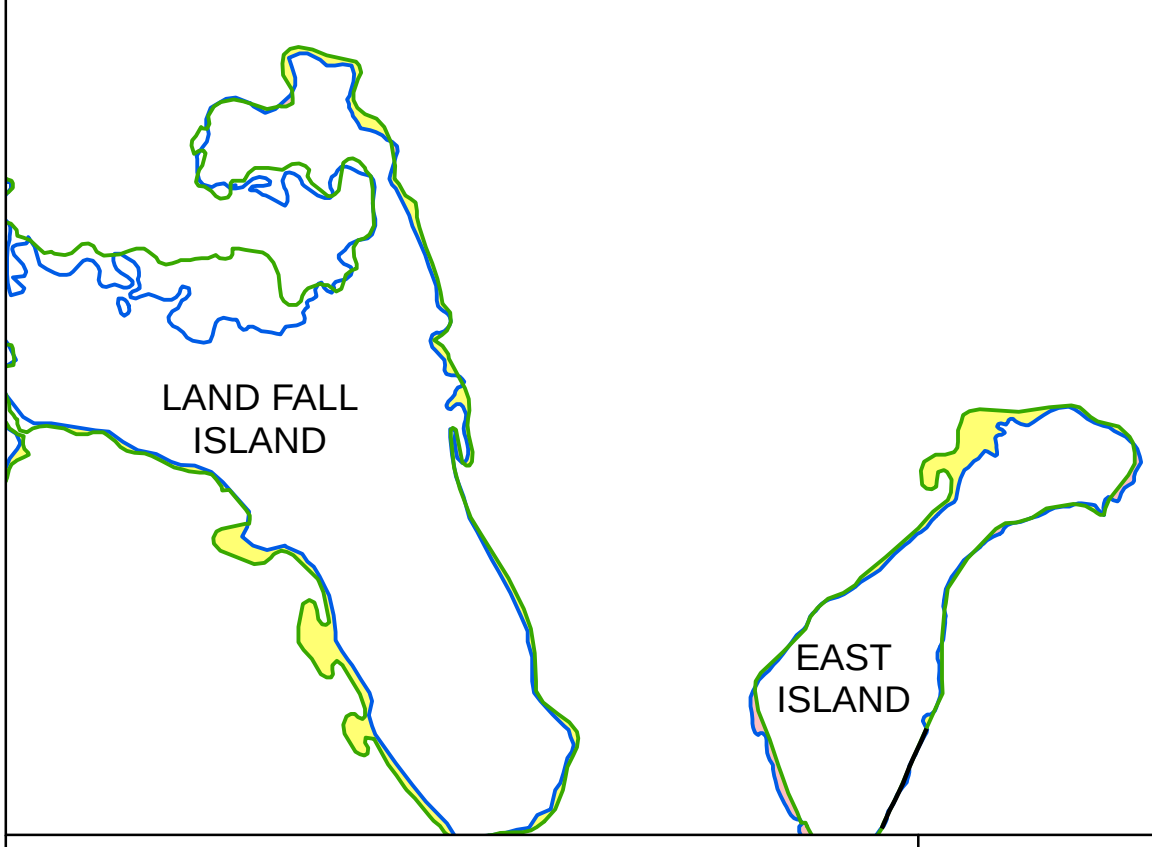
NORTH ANDAMAN

SHEET NO. 86G02NW



Legend

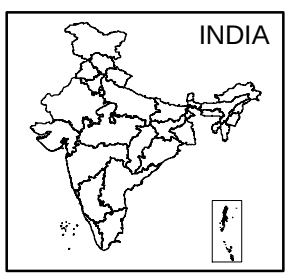
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

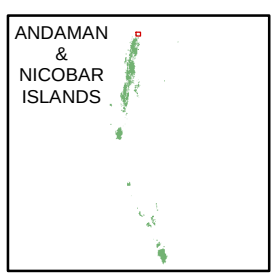
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
86C14 NE		SEA
86C14 SE	86G02 SW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

FOR OFFICIAL USE ONLY

SHEET NO. 86C14SW

B A Y

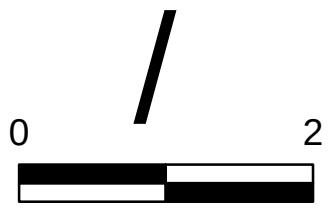
OF

BENGAL

REEF
ISLAND

Legend

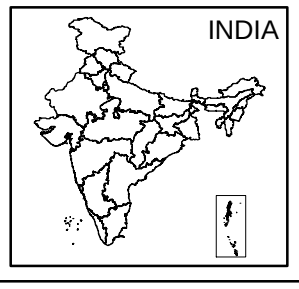
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

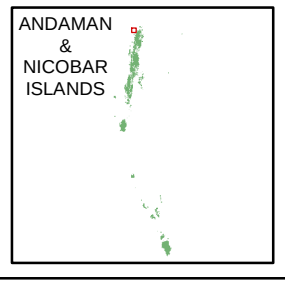


Scale in Km

INDEX TO SHEETS

SEA	SEA	86C14 NE
SEA		86C14 SE
SEA	86C15 NW	86C15 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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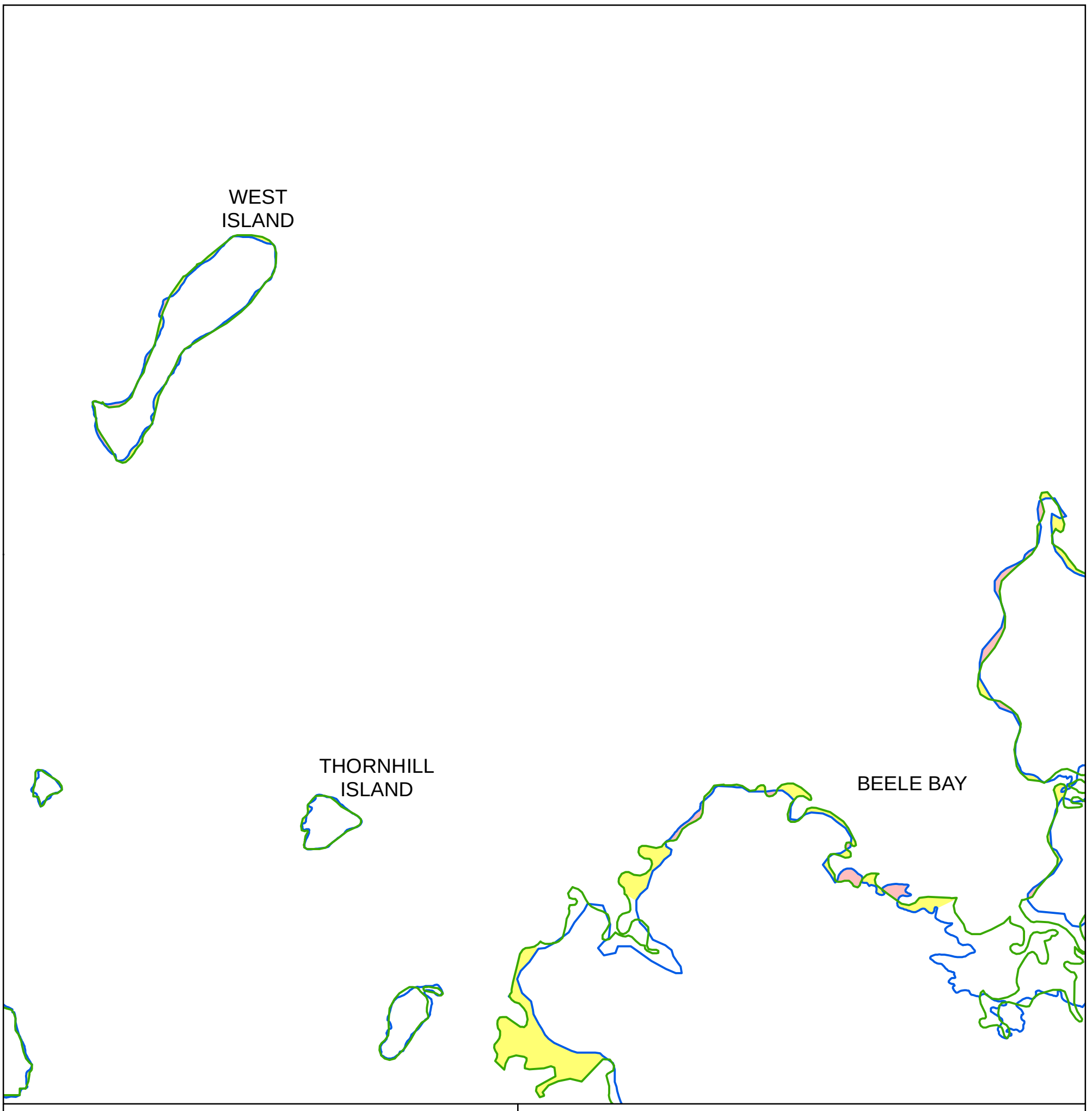
NORTH ANDAMAN

SHEET NO. 86C14SE



Legend

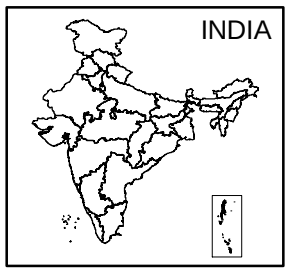
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

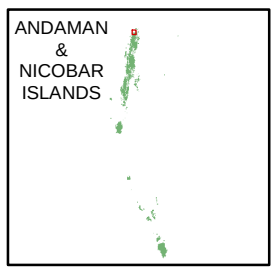
0 2

Scale in Km

INDEX TO SHEETS

SEA	86C14 NE	86G02 NW
86C14 SW		86G02 SW
86C15 NW	86C15 NE	86G03 NW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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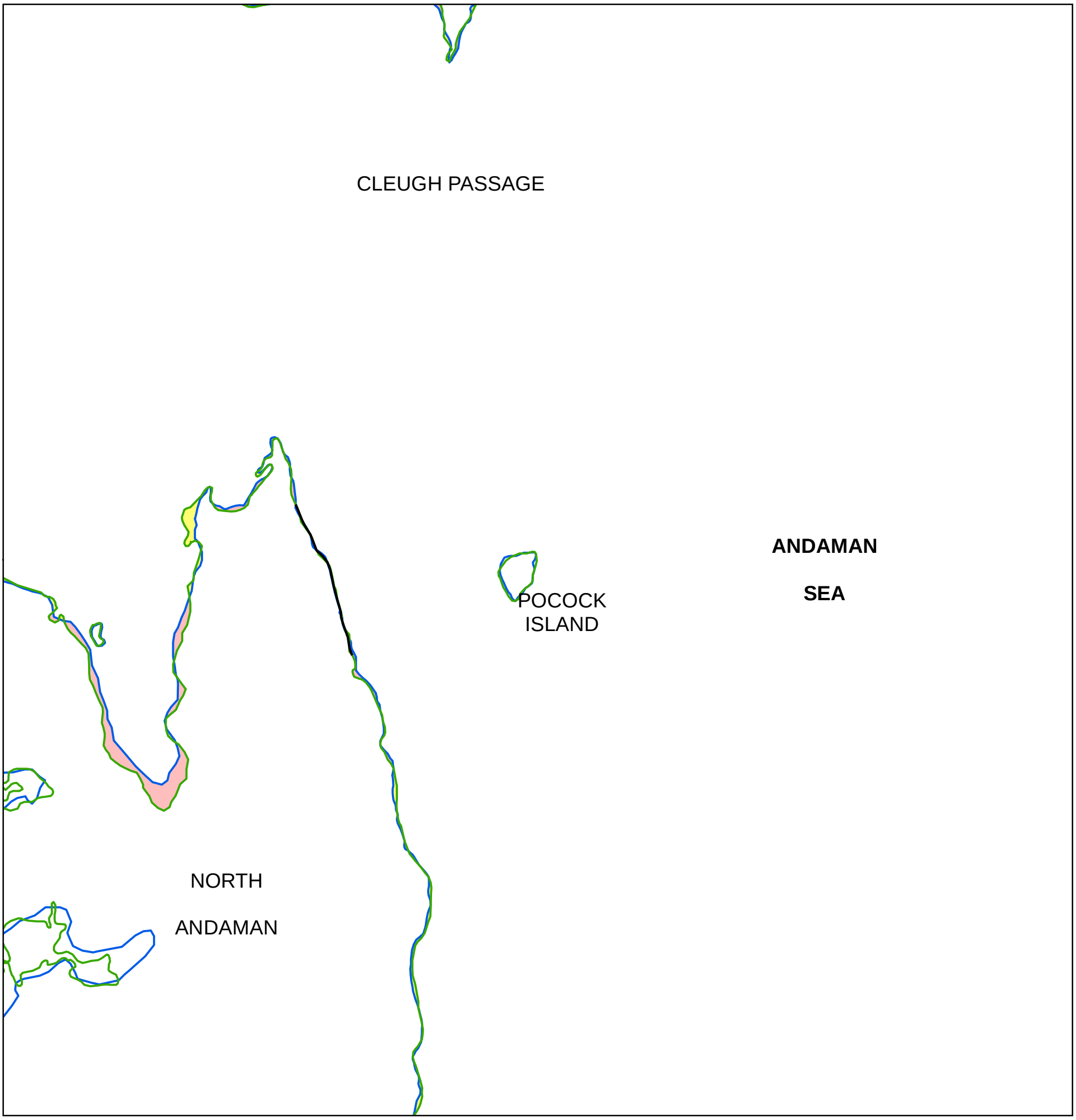
SHEET NO. 86G02SW



Legend

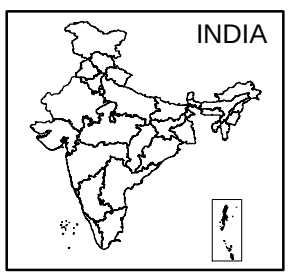
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

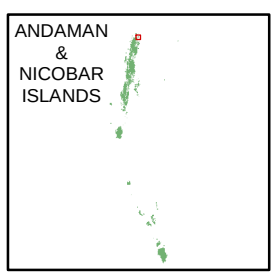
0 2

Scale in Km

INDEX TO SHEETS

86C14 NE	86G02 NW	SEA
86C14 SE		SEA
86C15 NE	86G03 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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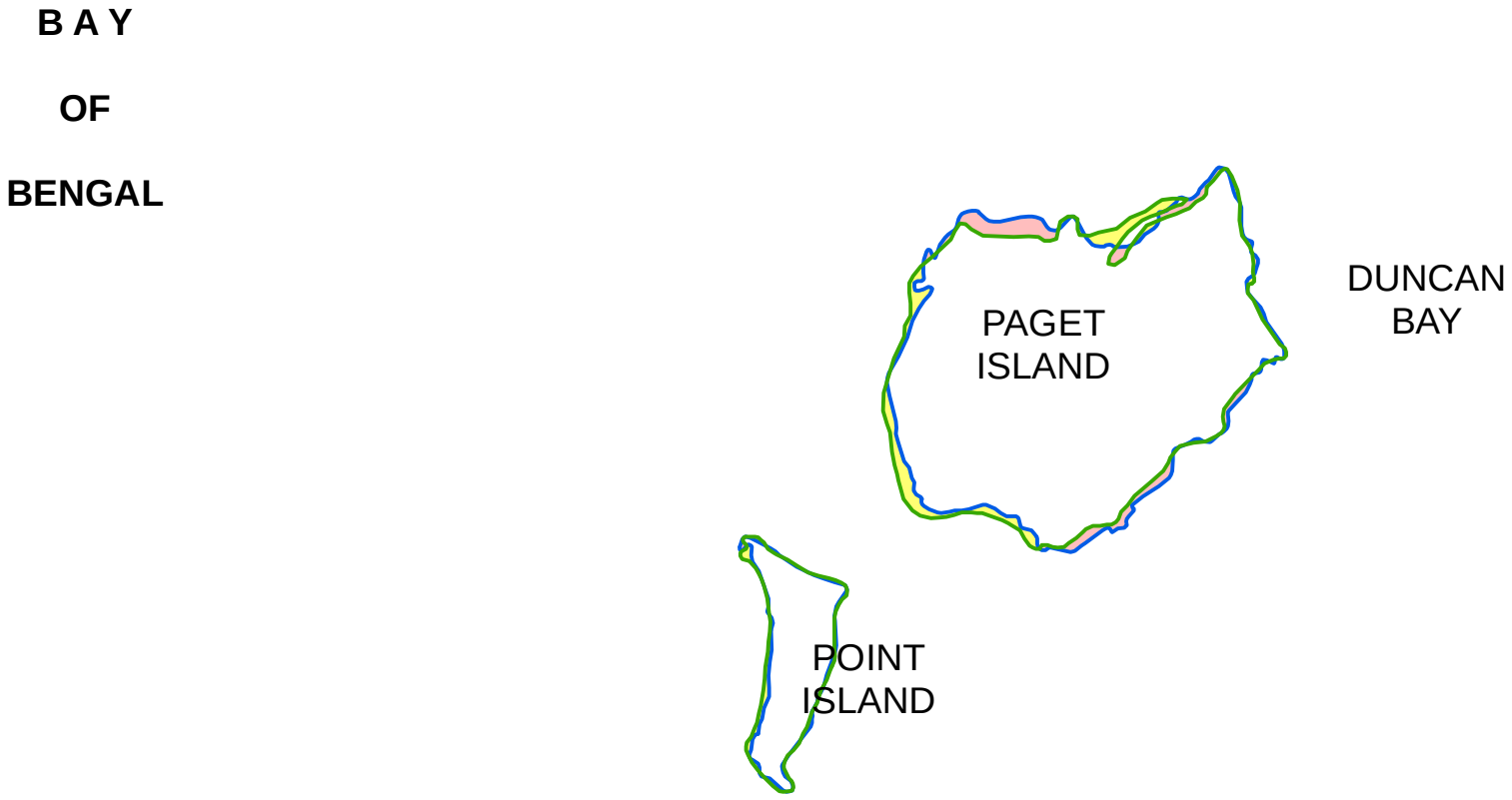
SHEET NO. 86C15NW



Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

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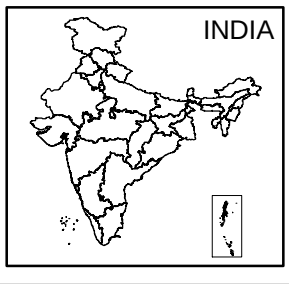
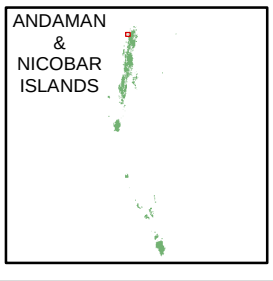
SEA		86C15 NE
SEA	86C15 SW	86C15 SE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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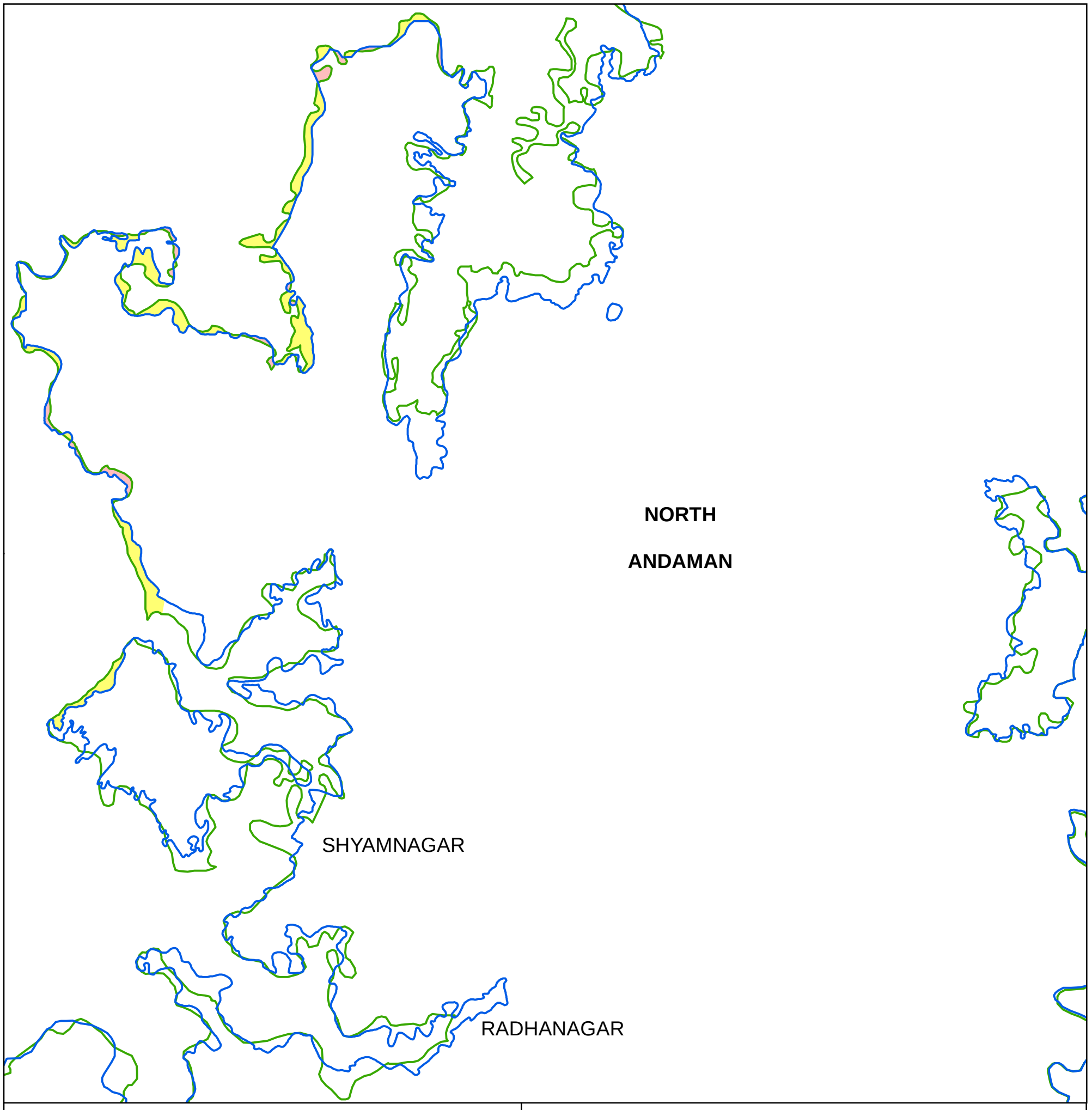
SHEET NO. 86C15NE



Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

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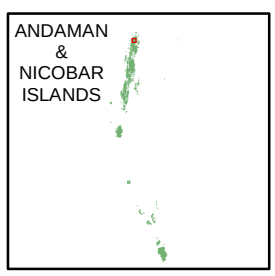
86C15 NW		86G03 NW
86C15 SW	86C15 SE	86G03 SW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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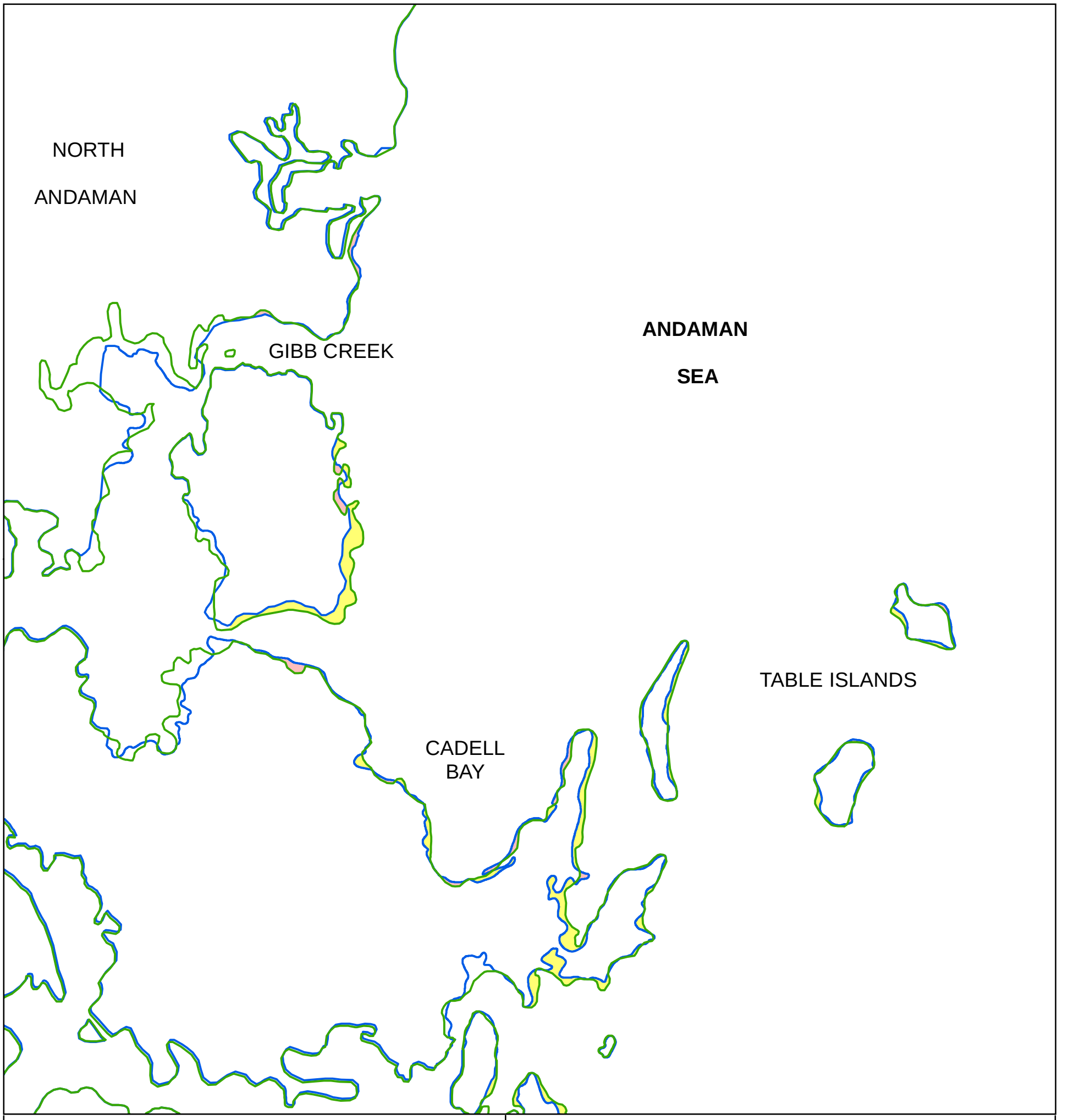
NORTH ANDAMAN

SHEET NO. 86G03NW



Legend

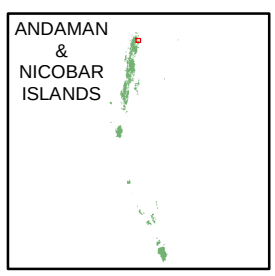
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86C14 SE	86G02 SW	SEA
86C15 NE		SEA
86C15 SE	86G03 SW	SEA



DATA SOURCE:
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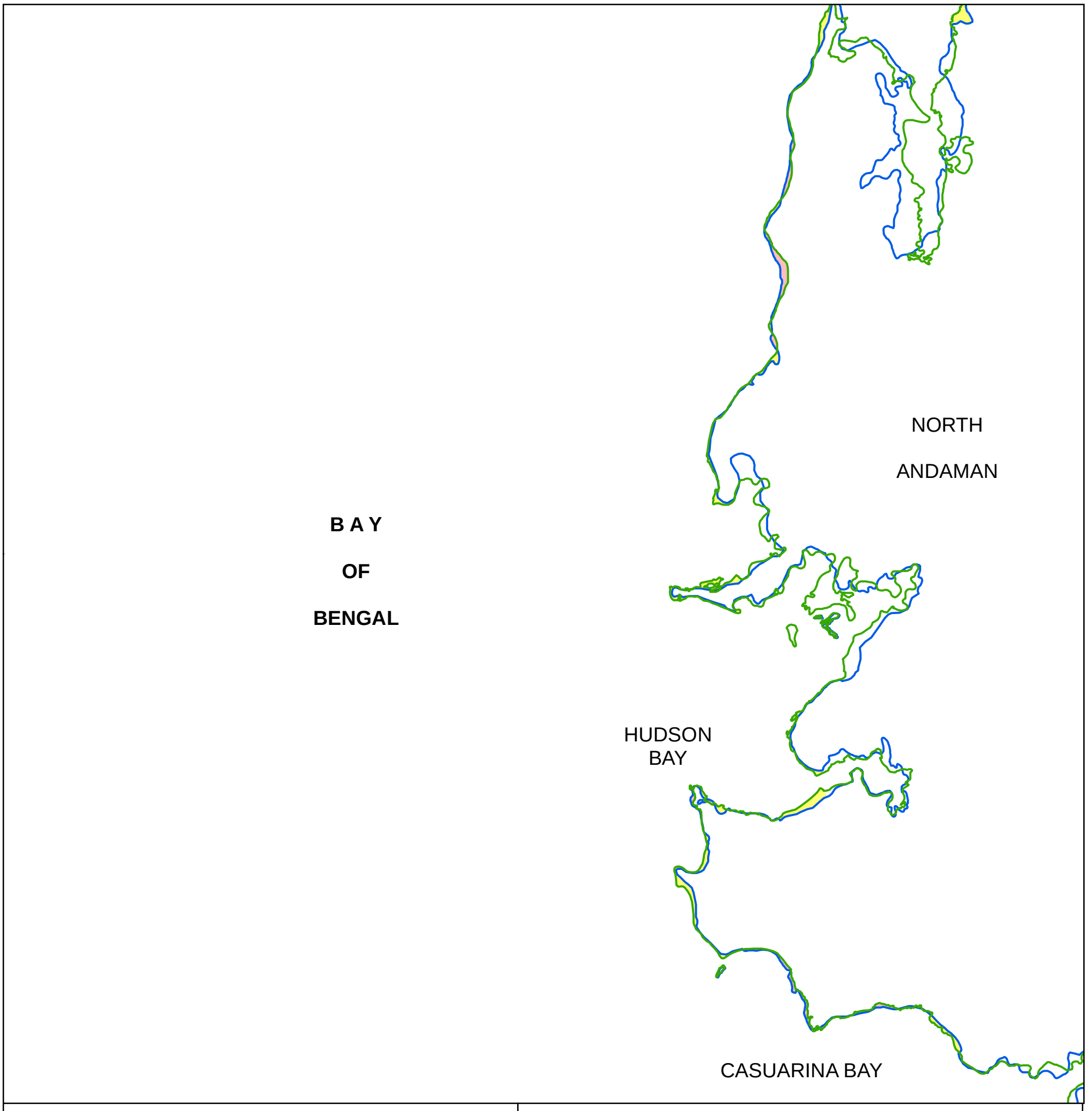
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

FOR OFFICIAL USE ONLY
SHEET NO. 86C15SW



Legend

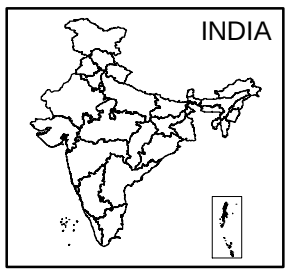
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

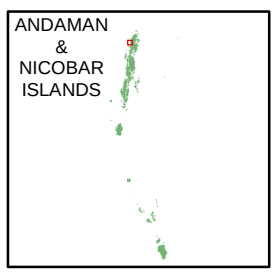
0 2

Scale in Km

INDEX TO SHEETS

SEA	86C15 NW	86C15 NE
SEA		86C15 SE
SEA	86C16 NW	86C16 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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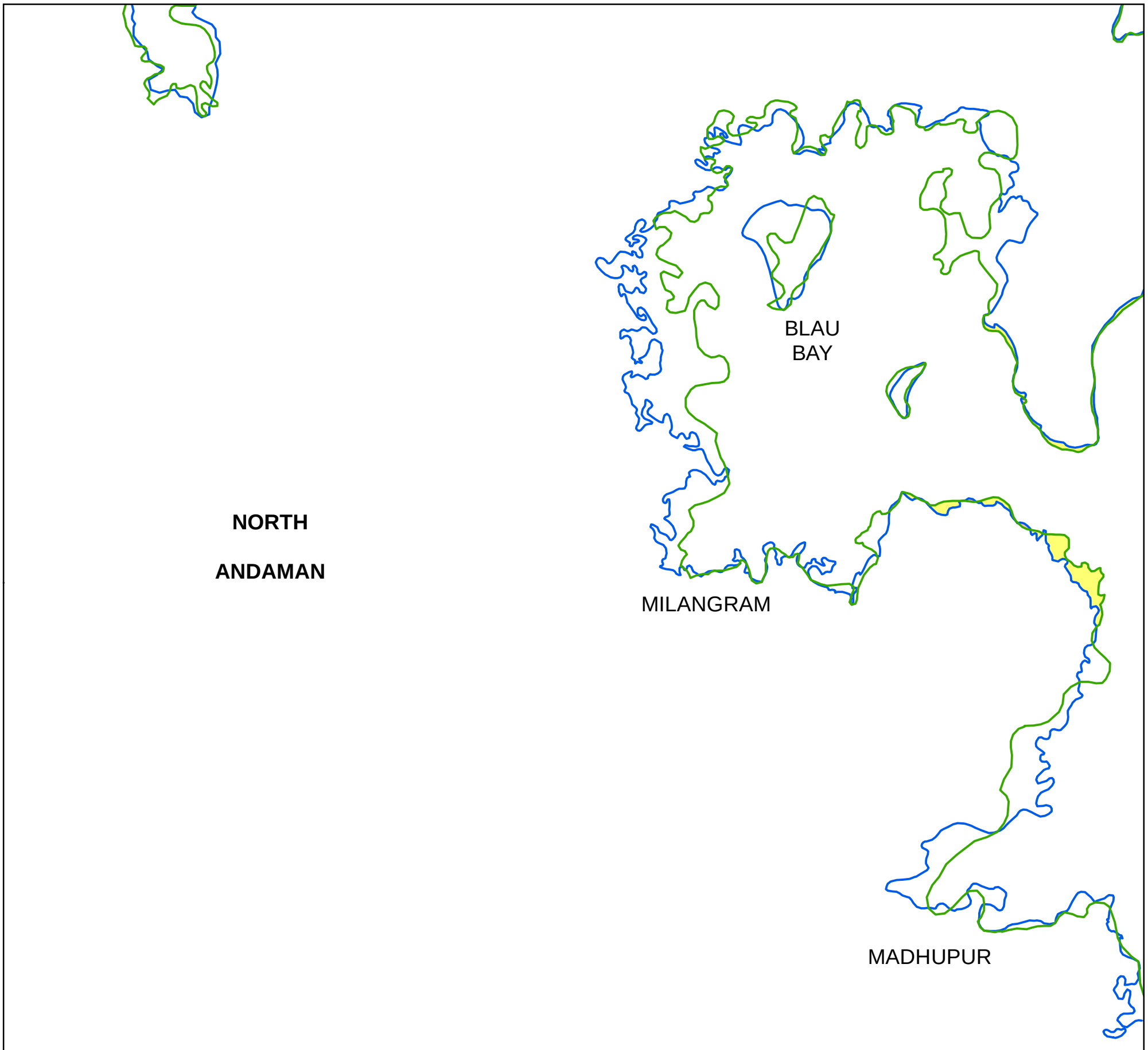
SHEET NO. 86C15SE



Legend

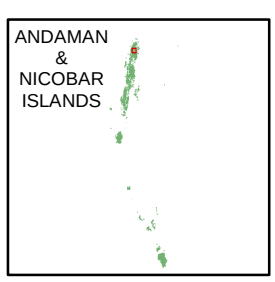
- ACCRETION
- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86C15 NW	86C15 NE	86G03 NW
86C15 SW		86G03 SW
86C16 NW	86C16 NE	86G04 NW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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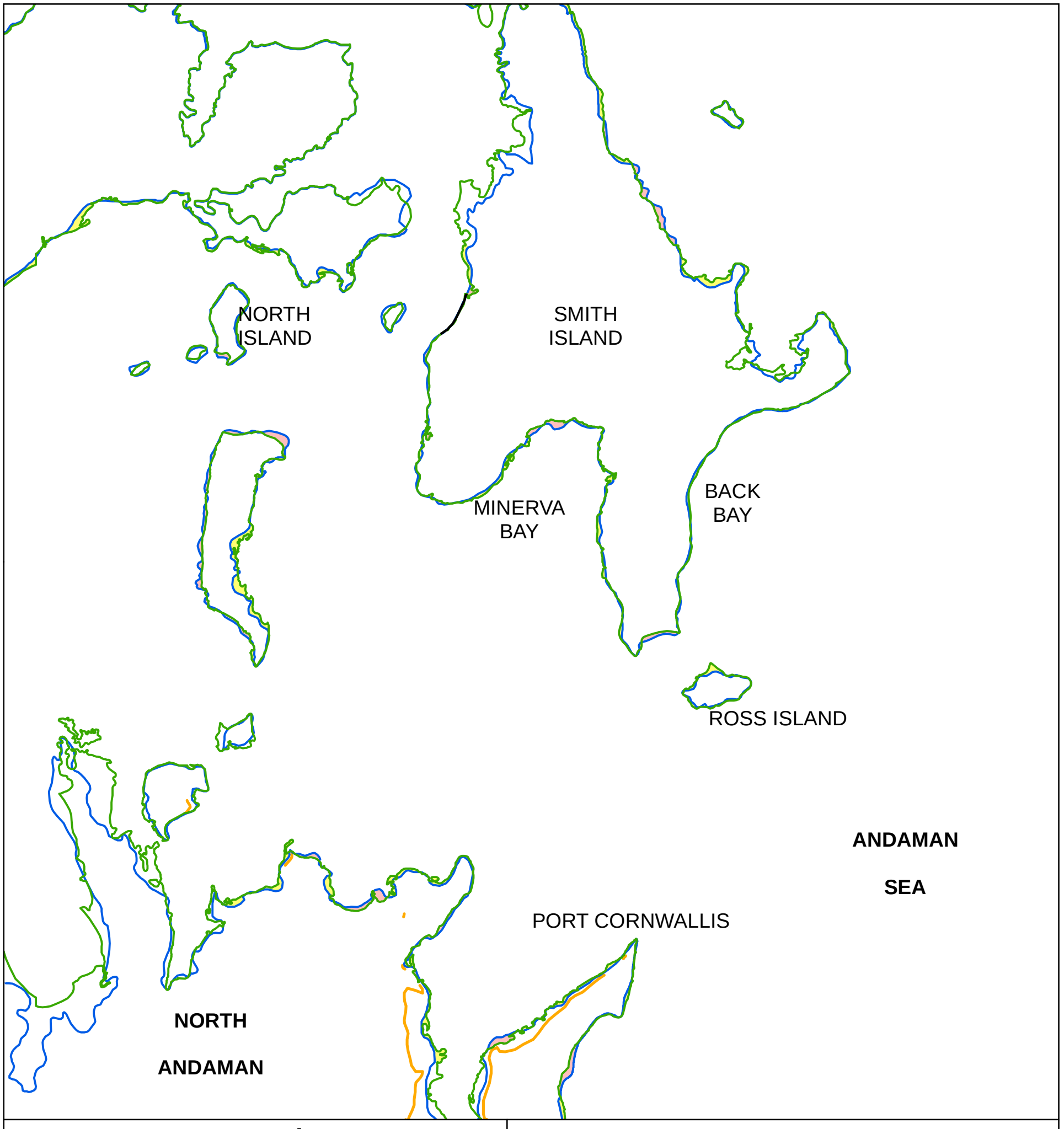
NORTH ANDAMAN

SHEET NO. 86G03SW



Legend

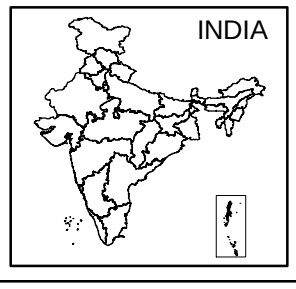
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

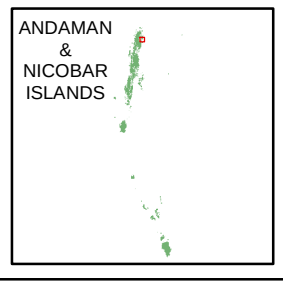
0 2

Scale in Km

INDEX TO SHEETS

86C15 NE	86G03 NW	SEA
86C15 SE		SEA
86C16 NE	86G04 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
SPACE APPLICATIONS CENTRE, AHMEDABAD
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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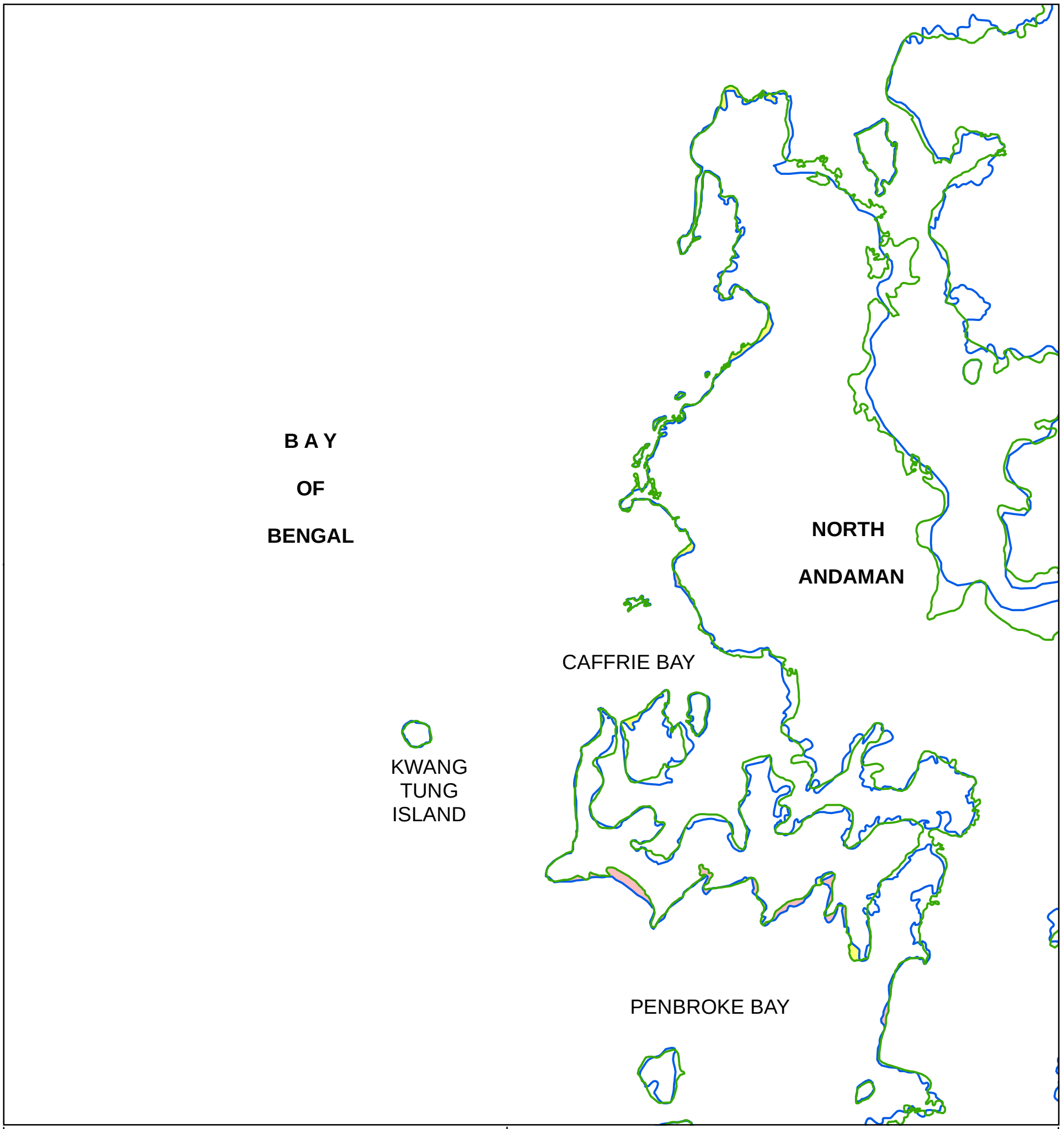
SHEET NO. 86C16NW



Legend

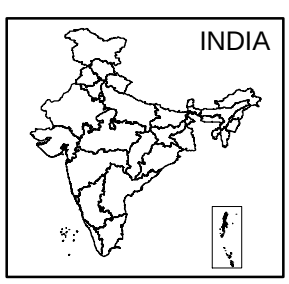
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

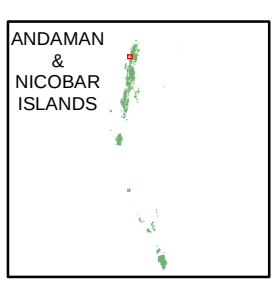
0 2

Scale in Km

INDEX TO SHEETS

SEA	86C15 SW	86C15 SE
SEA		86C16 NE
86C12 SE	86C16 SW	86C16 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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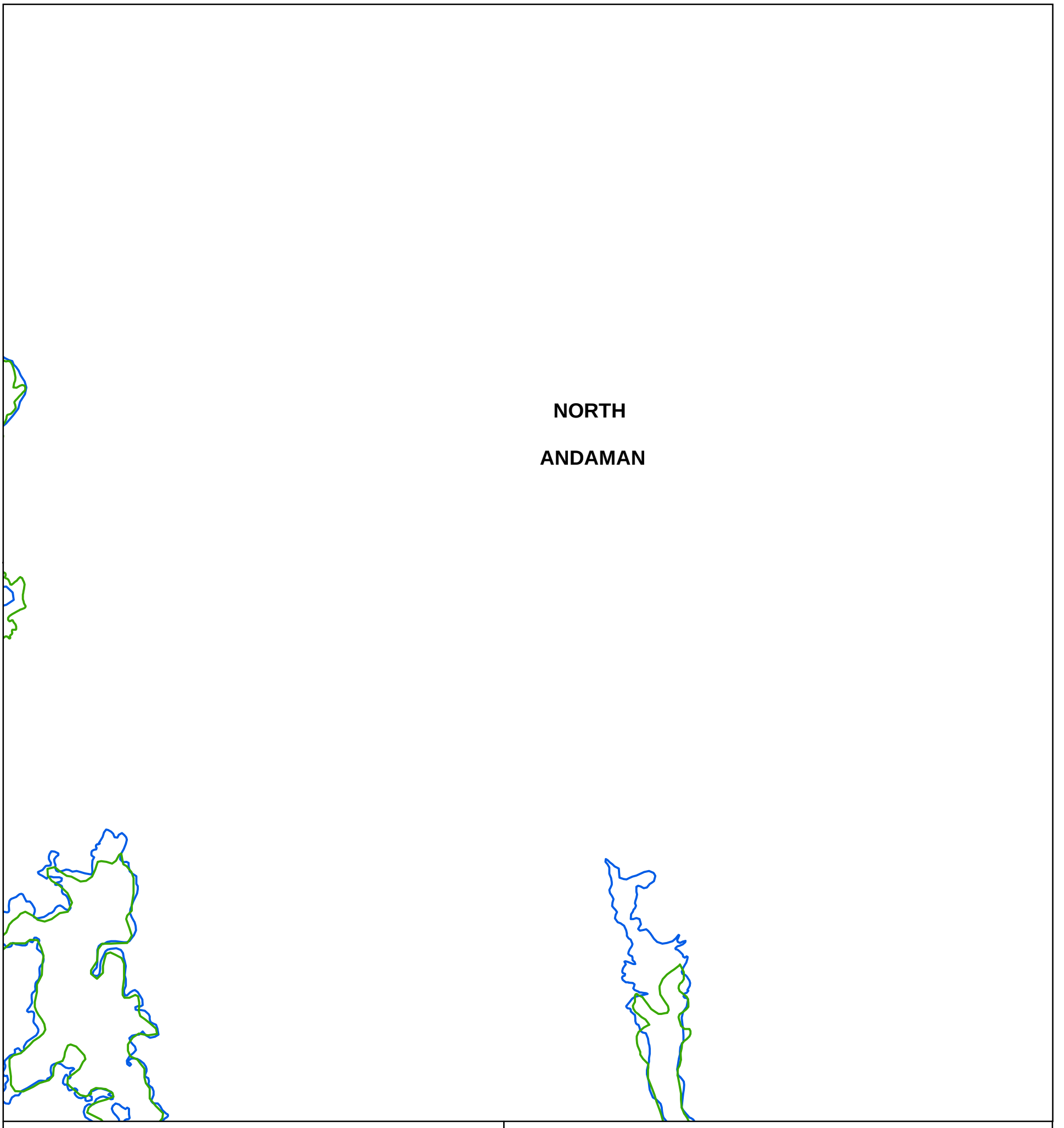
SHEET NO. 86C16NE



Legend

HIGH-TIDE LINE 2004-06

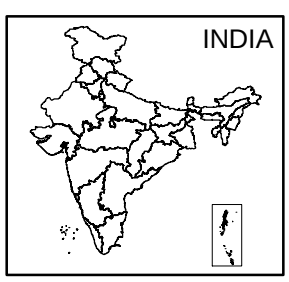
HIGH-TIDE LINE 1989-91

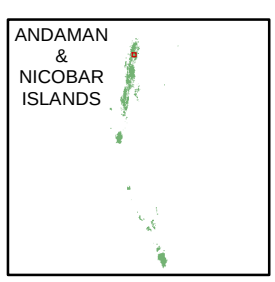
0 2

Scale in Km

INDEX TO SHEETS

86C15 SW	86C15 SE	86G03 SW
86C16 NW		86G04 NW
86C16 SW	86C16 SE	86G04 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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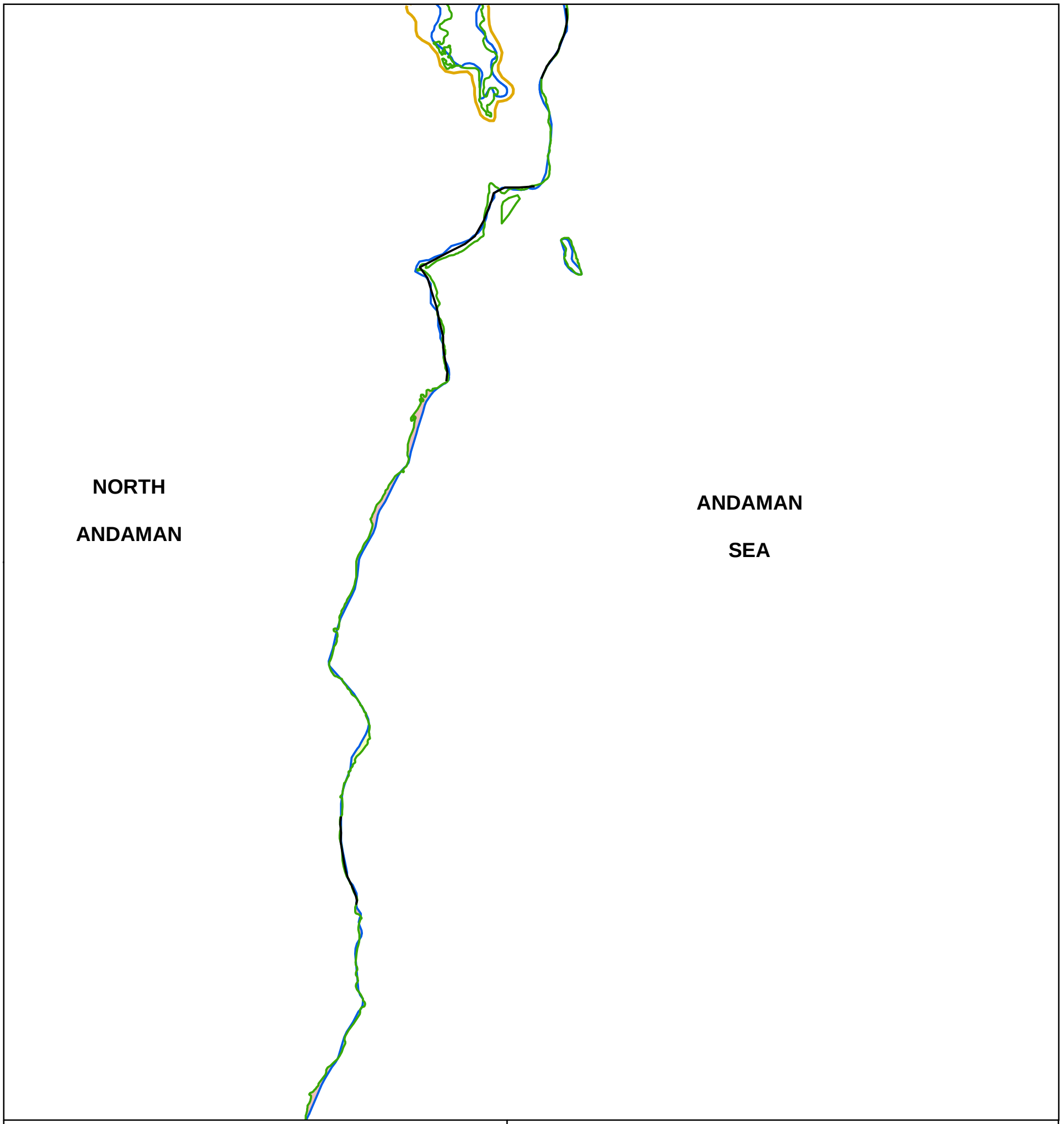
SHEET NO. 86G04NW



Legend

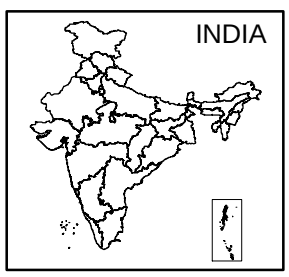
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

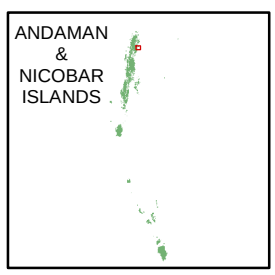
0 2

Scale in Km

INDEX TO SHEETS

86C15 SE	86G03 SW	SEA
86C16 NE		SEA
86C16 SE	86G04 SW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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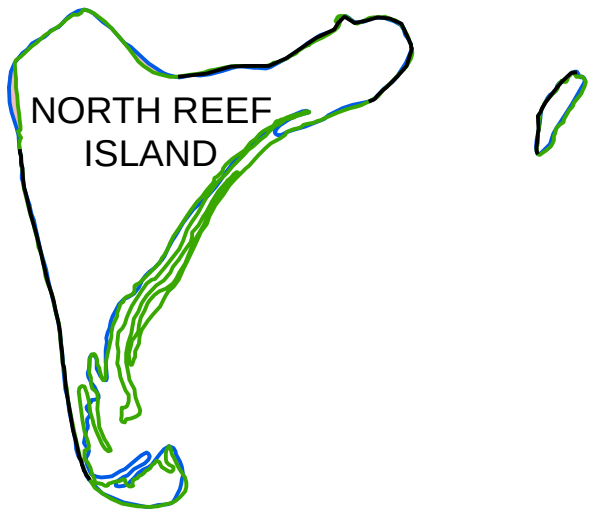
SHEET NO. 86C12SE



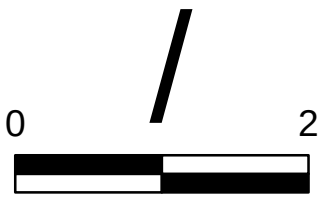
B A Y

OF

BENGAL

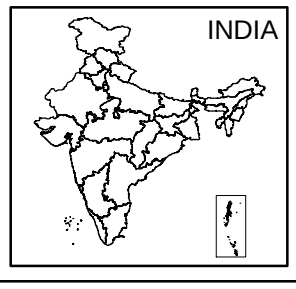
Legend

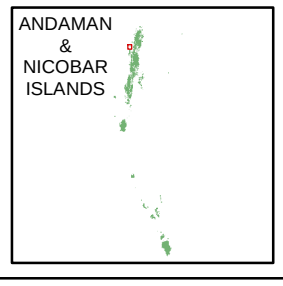
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	SEA	86C16 NW
SEA		86C16 SW
SEA	86D09 NE	86D13 NW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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SHEET NO. 86C16SW

MCPHERSOR BAY

NORTH ANDAMAN

B A Y OF BENGAL

HOARE BAY

Legend

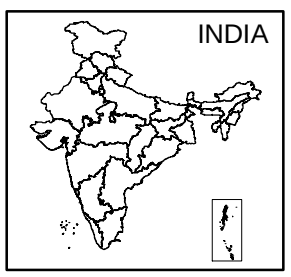
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

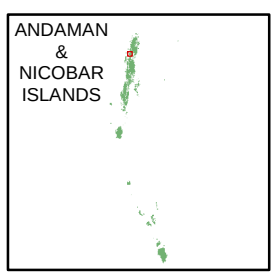
0 2

Scale in Km

INDEX TO SHEETS

SEA	86C16 NW	86C16 NE
86C12 SE		86C16 SE
86D09 NE	86D13 NW	86D13 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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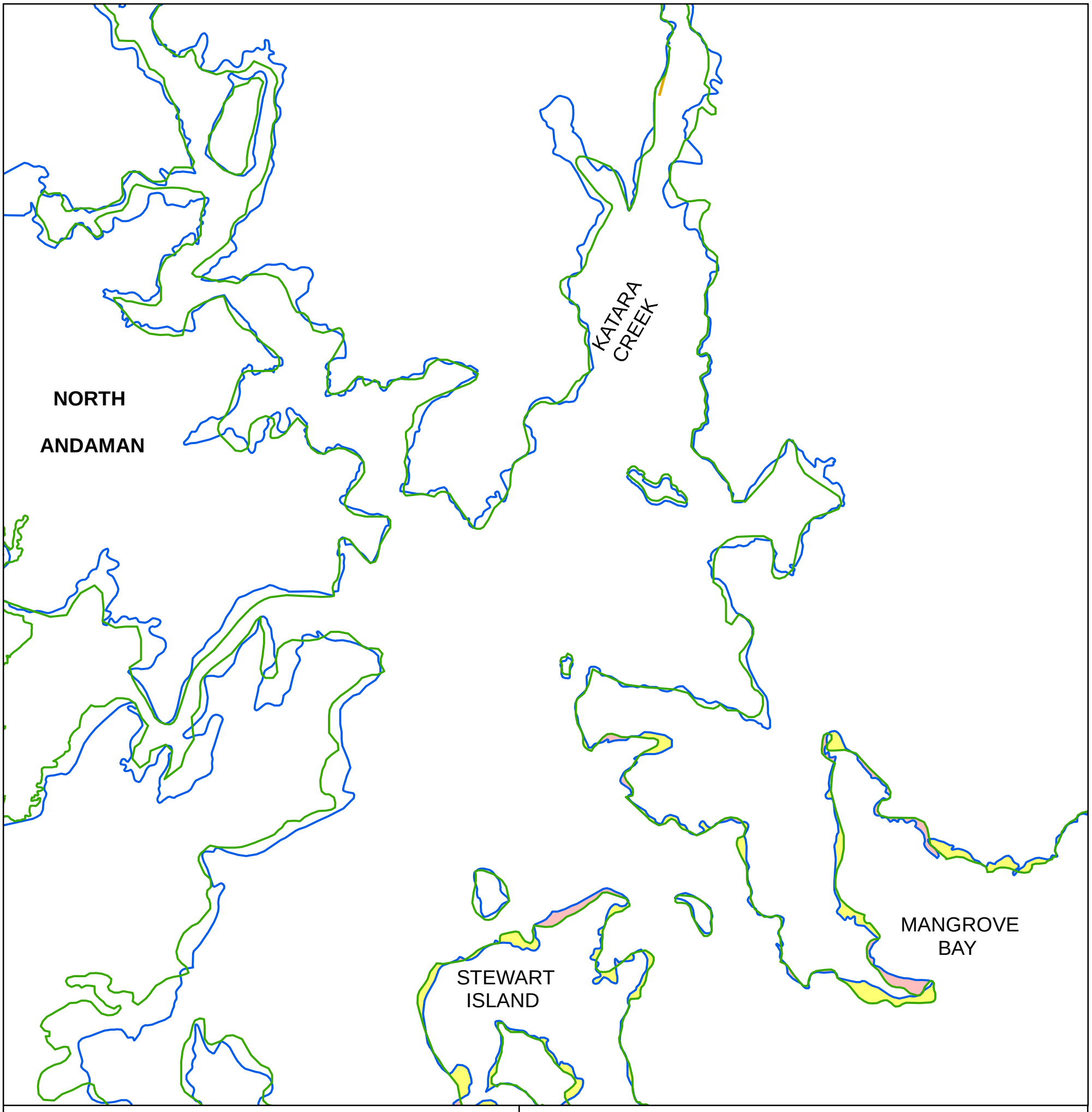
SHEET NO. 86C16SE



Legend

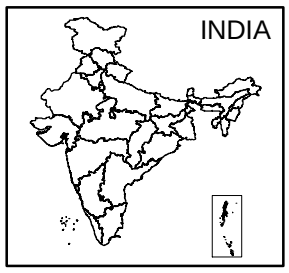
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

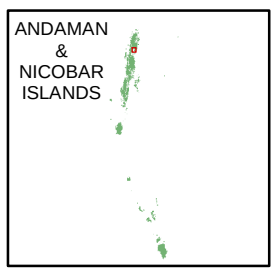
0 2

Scale in Km

INDEX TO SHEETS

86C16 NW	86C16 NE	86G04 NW
86C16 SW		86G04 SW
86D13 NW	86D13 NE	86H01 NW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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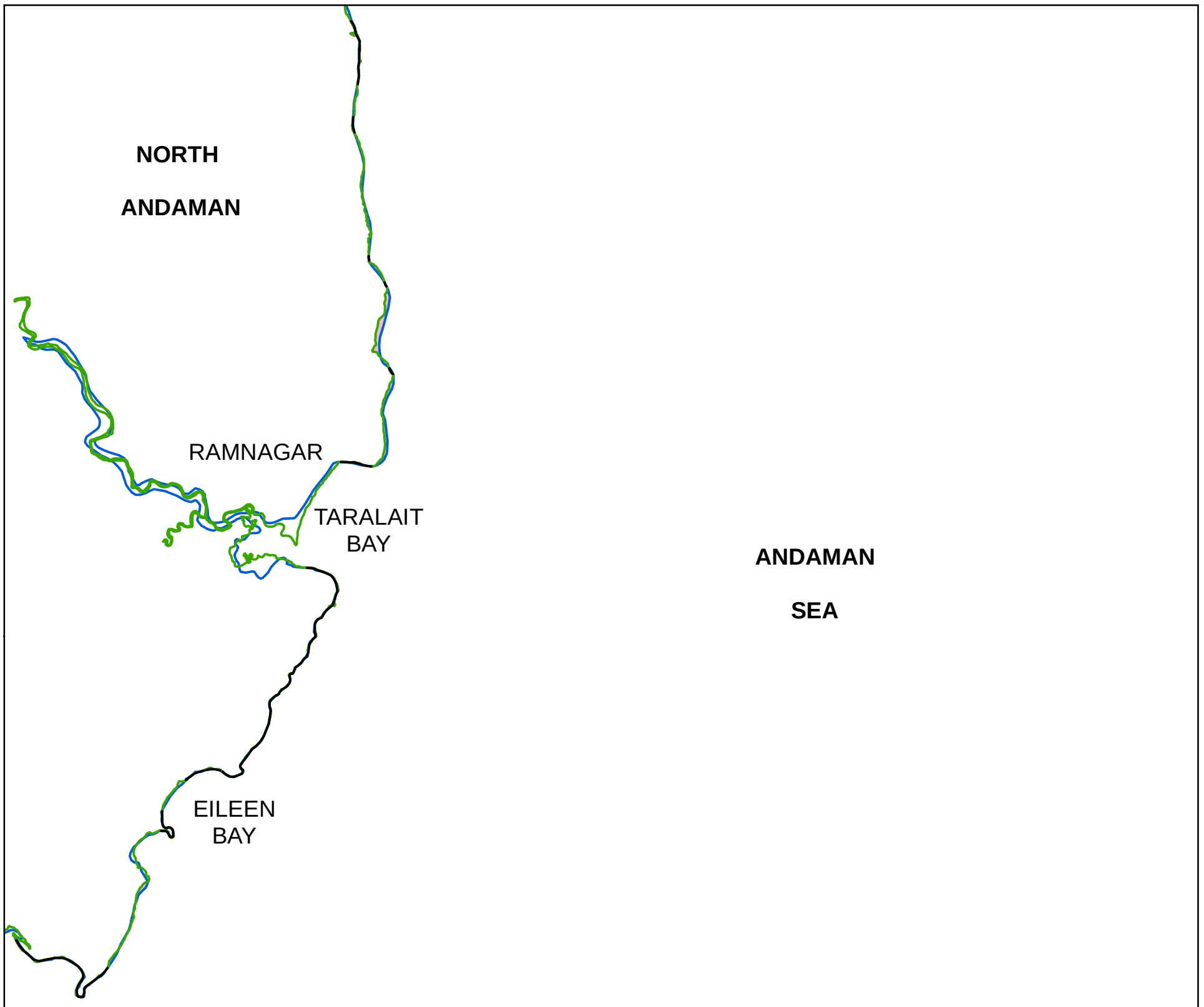
NORTH ANDAMAN

SHEET NO. 86G04SW



Legend

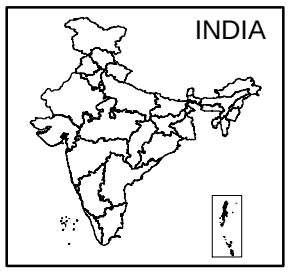
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

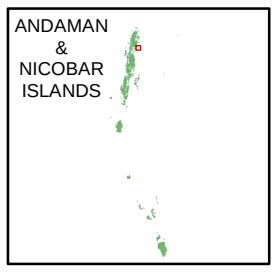
0 2

Scale in Km

INDEX TO SHEETS

86C16 NE	86G04 NW	SEA
86C16 SE		SEA
86D13 NE	86H01 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

NORTH ANDAMAN

ANDAMAN & NICOBAR ISLANDS

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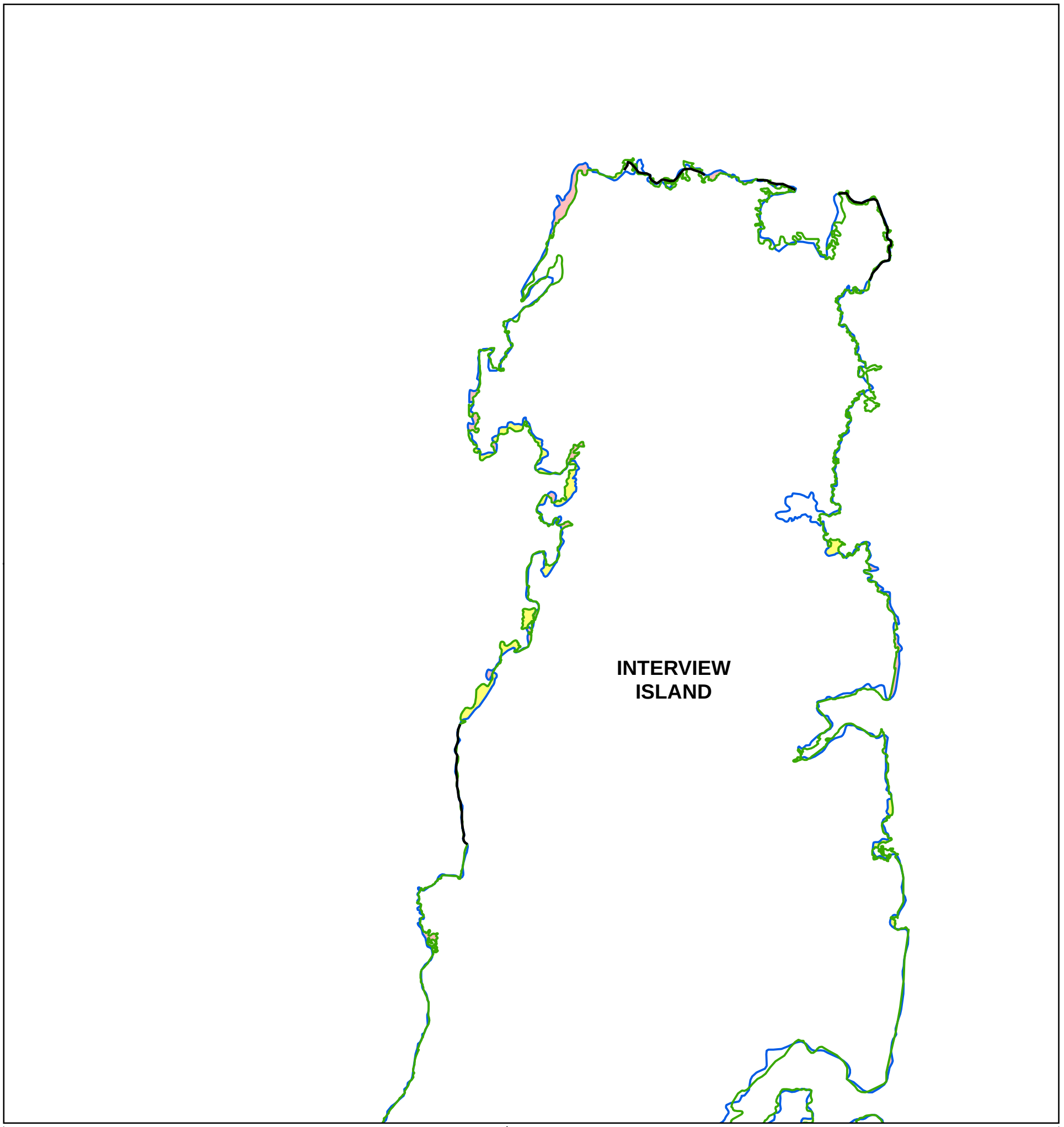
SHEET NO. 86D09NE



Legend

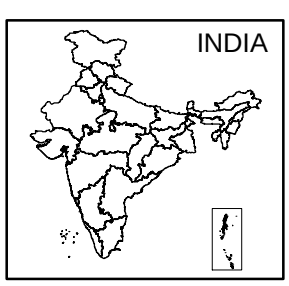
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

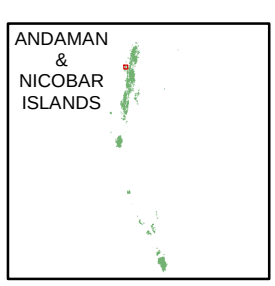
0 2

Scale in Km

INDEX TO SHEETS

SEA	86C12 SE	86C16 SW
SEA		86D13 NW
SEA	86D09 SE	86D13 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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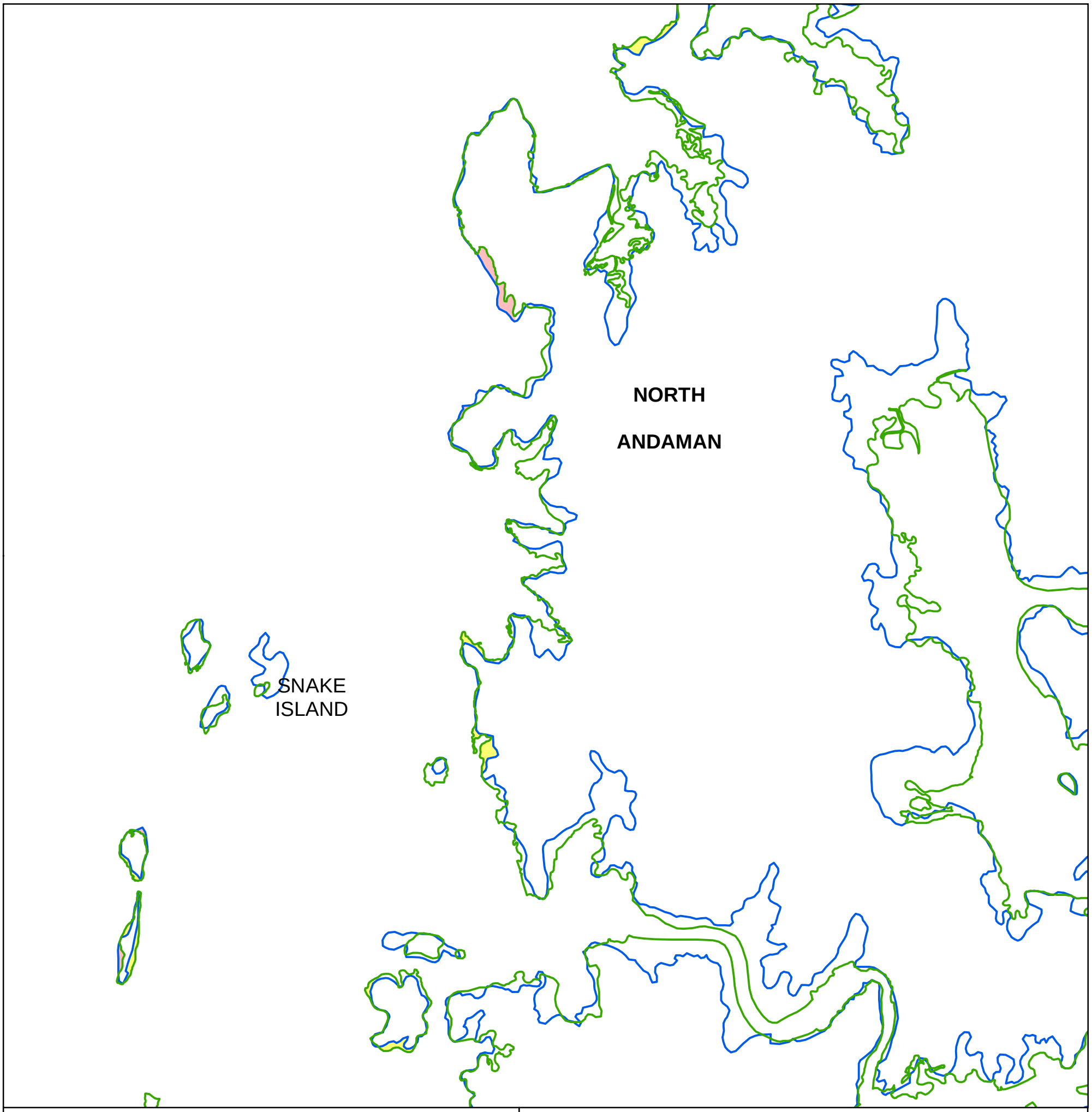
NORTH ANDAMAN

SHEET NO. 86D13NW



Legend

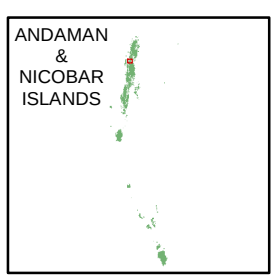
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86C12 SE	86C16 SW	86C16 SE
86D09 NE		86D13 NE
86D09 SE	86D13 SW	86D13 SE



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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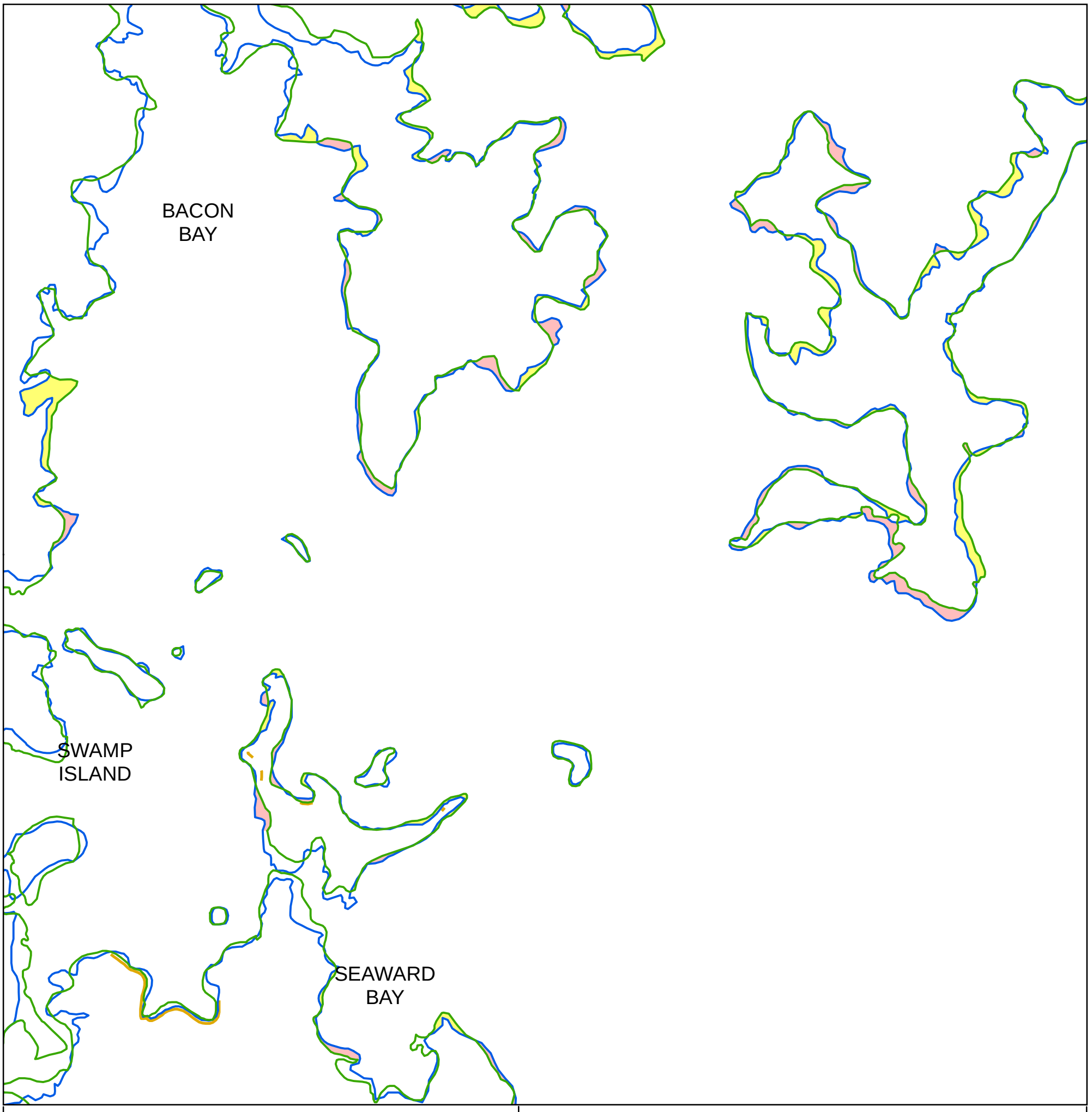
NORTH ANDAMAN

SHEET NO. 86D13NE



Legend

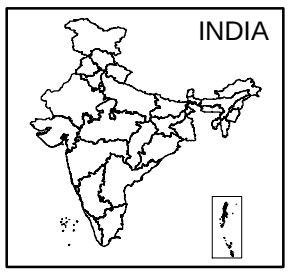
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

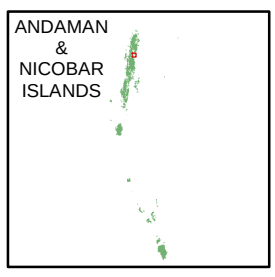
0 2

Scale in Km

INDEX TO SHEETS

86C16 SW	86C16 SE	86G04 SW
86D13 NW		86H01 NW
86D13 SW	86D13 SE	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NORTH ANDAMAN

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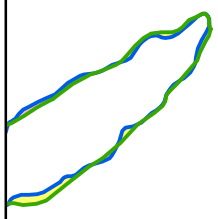
SHEET NO. 86H01NW



ANDAMAN

SEA

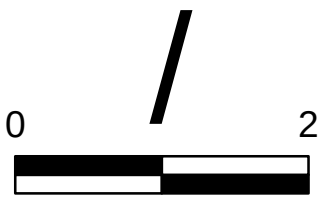
Legend

EROSION

ACCRETION

HIGH-TIDE LINE 2004-06

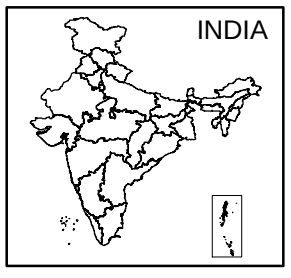
HIGH-TIDE LINE 1989-91

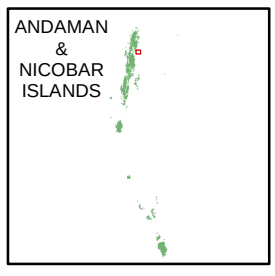


Scale in Km

INDEX TO SHEETS

86C16 SE	86G04 SW	SEA
86D13 NE		SEA
86D13 SE	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

NORTH ANDAMAN — ANDAMAN & NICOBAR ISLANDS

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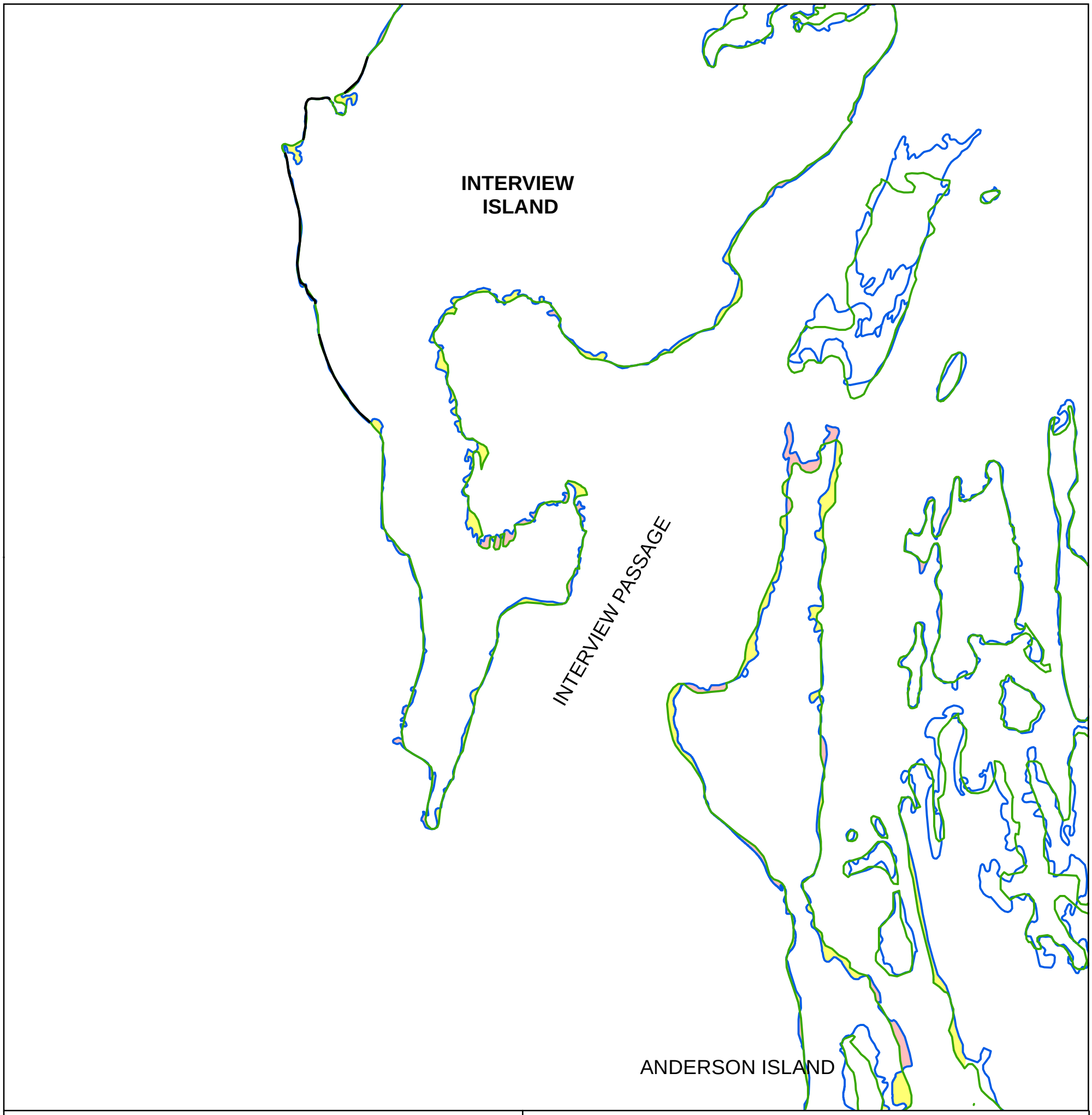
SHEET NO. 86D09SE



Legend

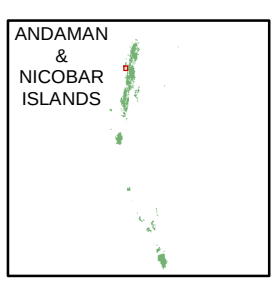
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

0 — 2

Scale in Km

INDEX TO SHEETS

SEA	86D09 NE	86D13 NW
SEA		86D13 SW
SEA	86D10 NE	86D14 NW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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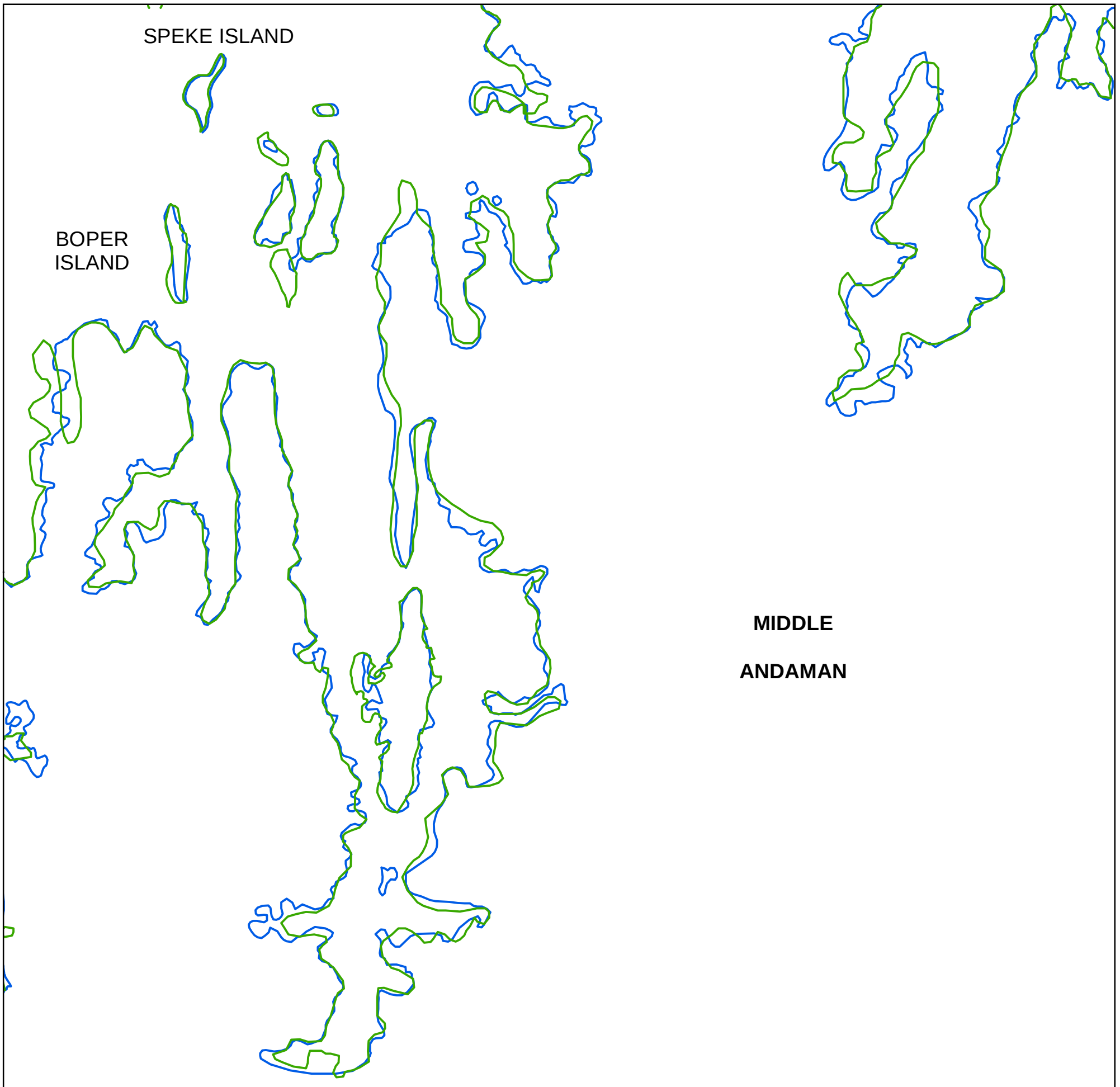
MIDDLE ANDAMAN

SHEET NO. 86D13SW



Legend

HIGH-TIDE LINE 2004-06

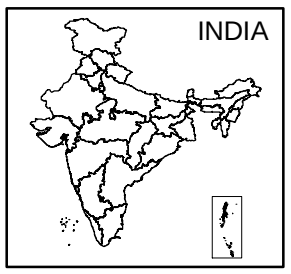
HIGH-TIDE LINE 1989-91

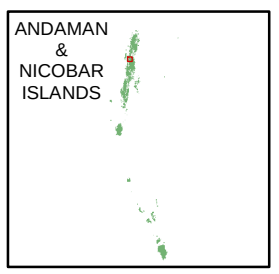
0 2

Scale in Km

INDEX TO SHEETS

86D09 NE	86D13 NW	86D13 NE
86D09 SE		86D13 SE
86D10 NE	86D14 NW	86D14 NE





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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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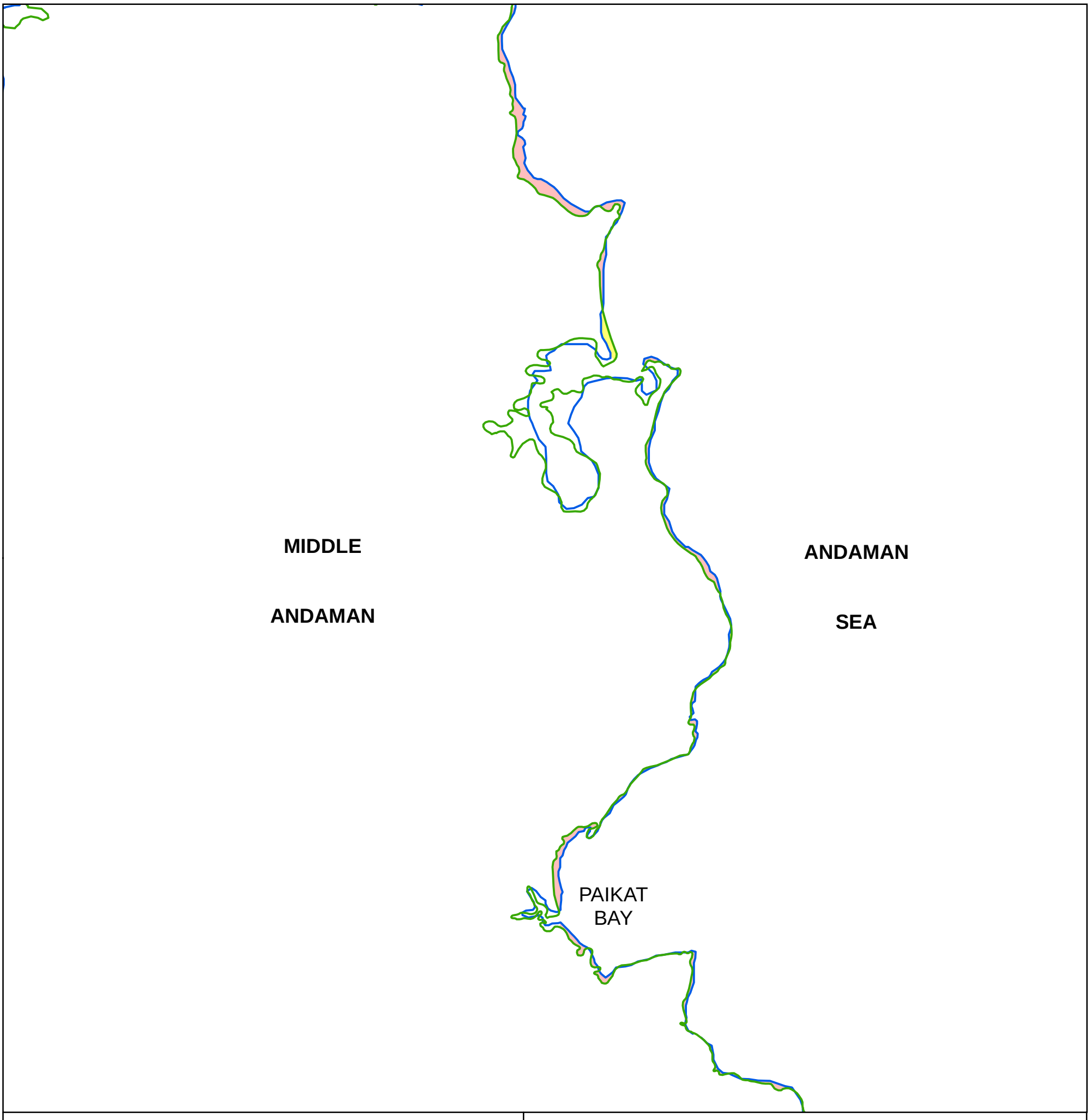
MIDDLE ANDAMAN

SHEET NO. 86D13SE



Legend

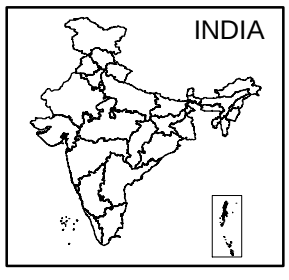
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

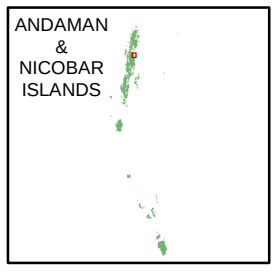
0 2

Scale in Km

INDEX TO SHEETS

86D13 NW	86D13 NE	86H01 NW
86D13 SW		SEA
86D14 NW	86D14 NE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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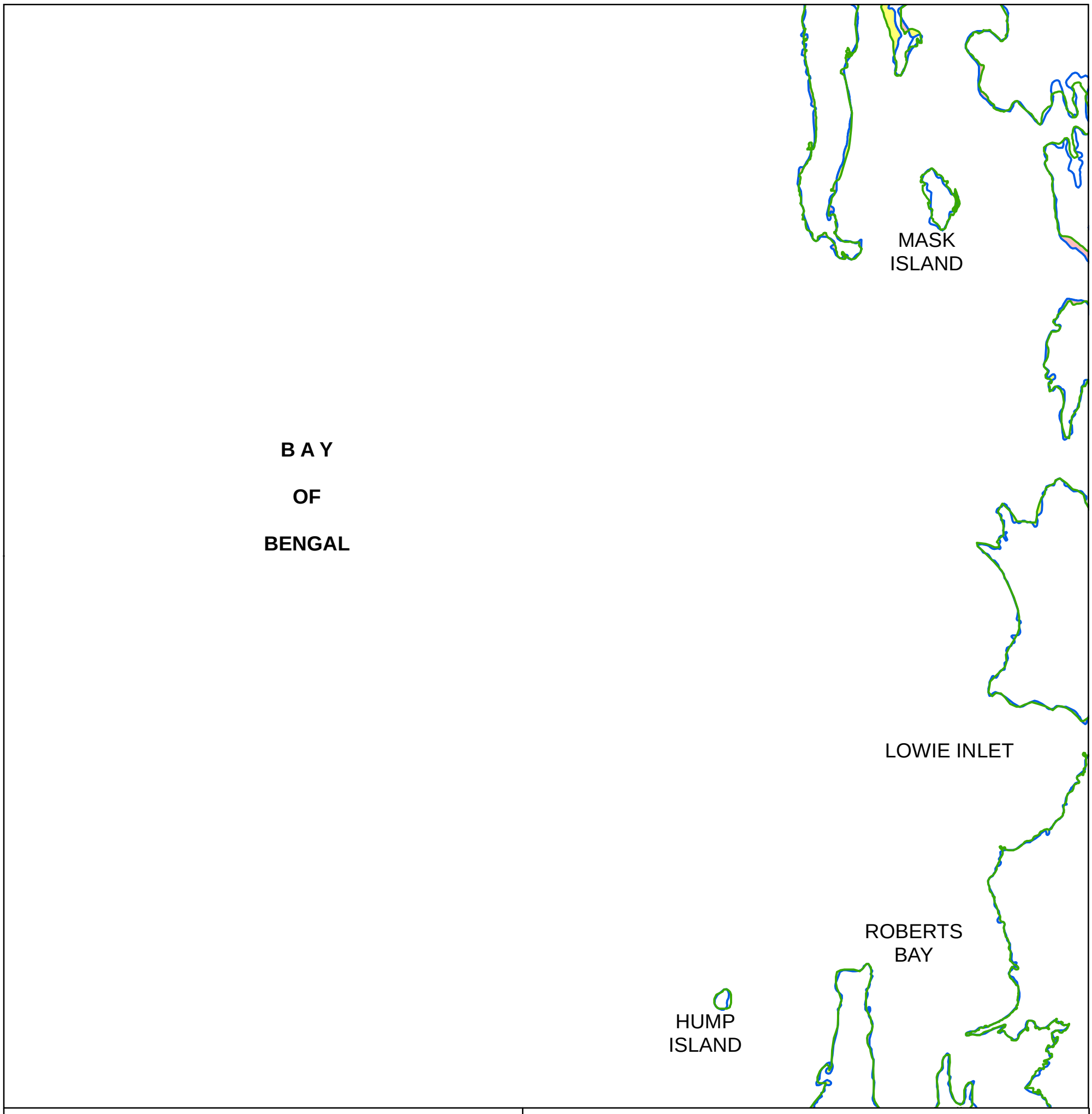
SHEET NO. 86D10NE



Legend

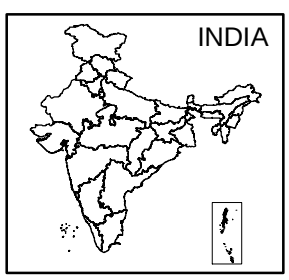
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

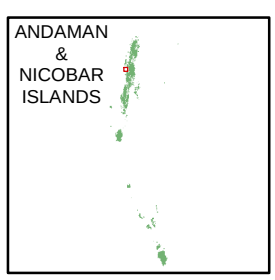
0 2

Scale in Km

INDEX TO SHEETS

SEA	86D09 SE	86D13 SW
SEA		86D14 NW
SEA	86D10 SE	86D14 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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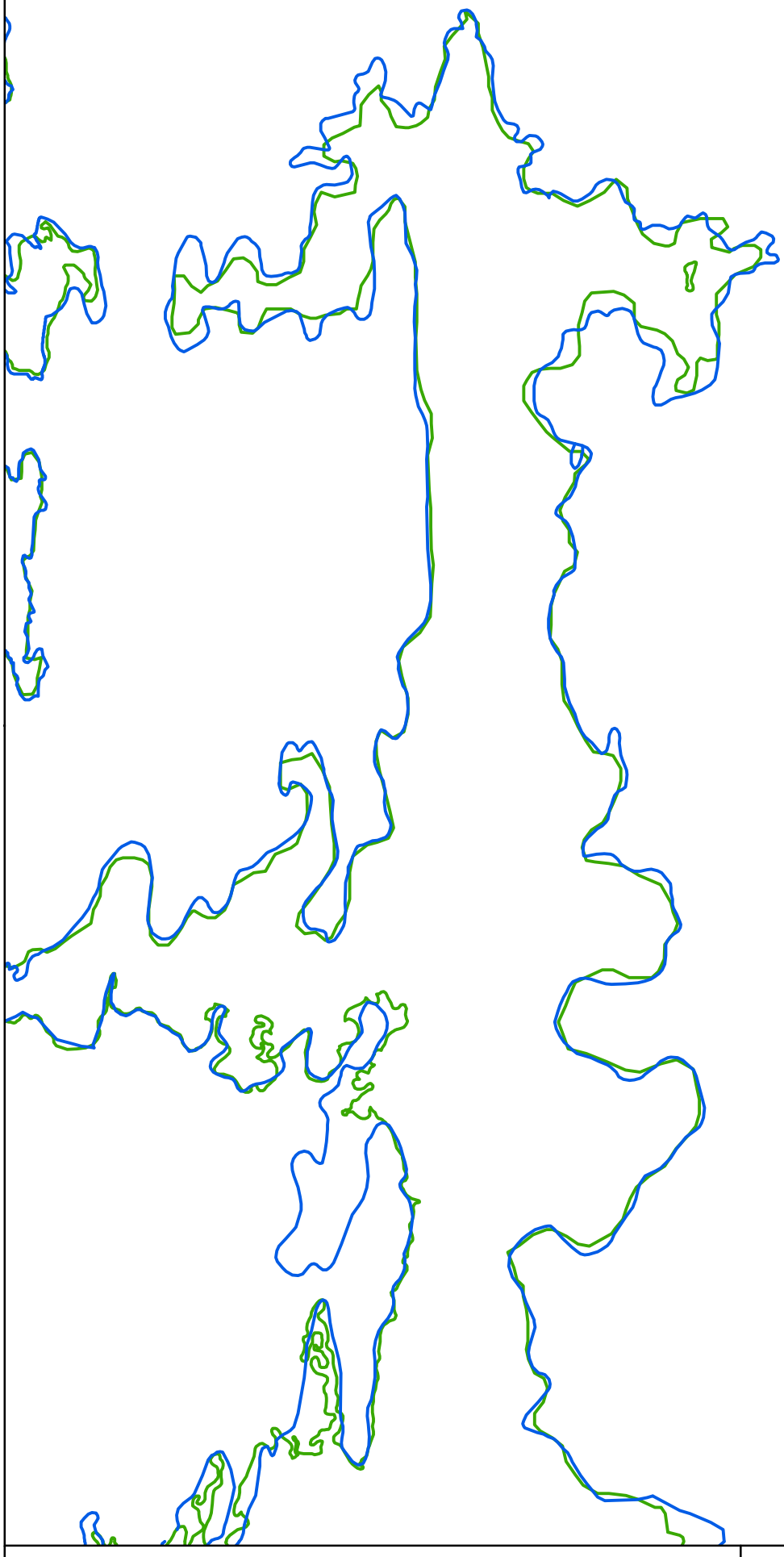
SHEET NO. 86D14NW



MIDDLE

ANDAMAN

Legend

HIGH-TIDE LINE 2004-06

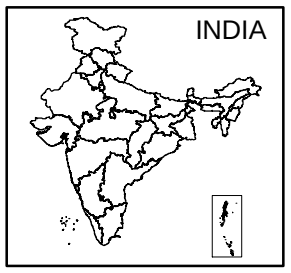
HIGH-TIDE LINE 1989-91

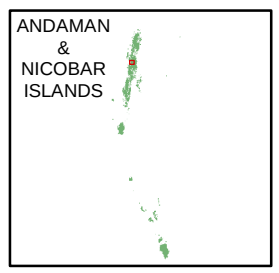
0 2

Scale in Km

INDEX TO SHEETS

86D09 SE	86D13 SW	86D13 SE
86D10 NE		86D14 NE
86D10 SE	86D14 SW	86D14 SE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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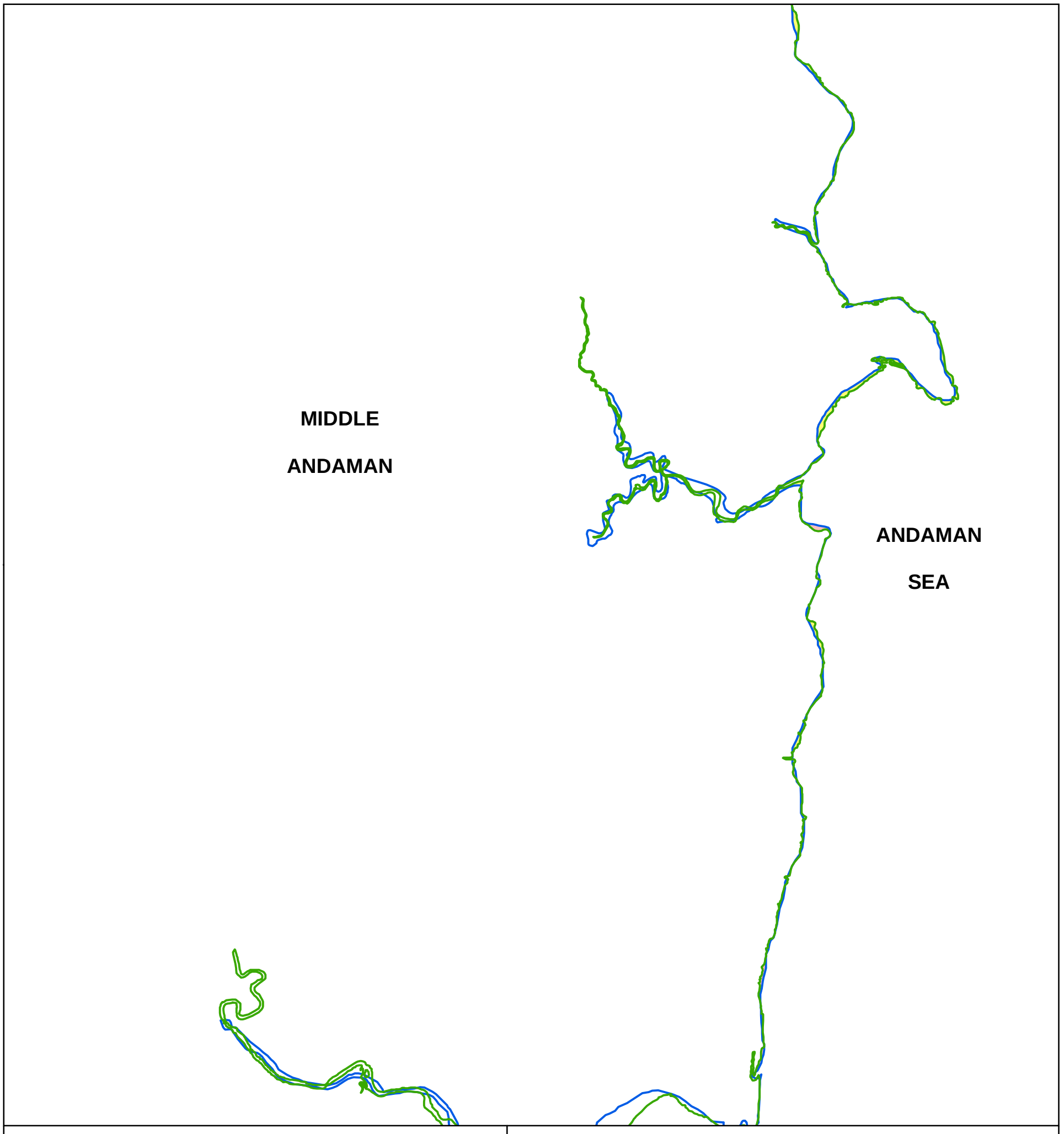
MIDDLE ANDAMAN

SHEET NO. 86D14NE



Legend

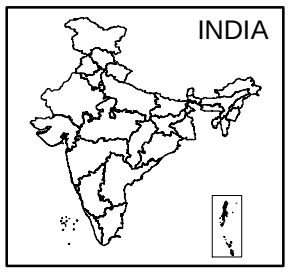
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

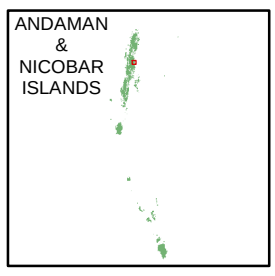
0 2

Scale in Km

INDEX TO SHEETS

86D13 SW	86D13 SE	SEA
86D14 NW		SEA
86D14 SW	86D14 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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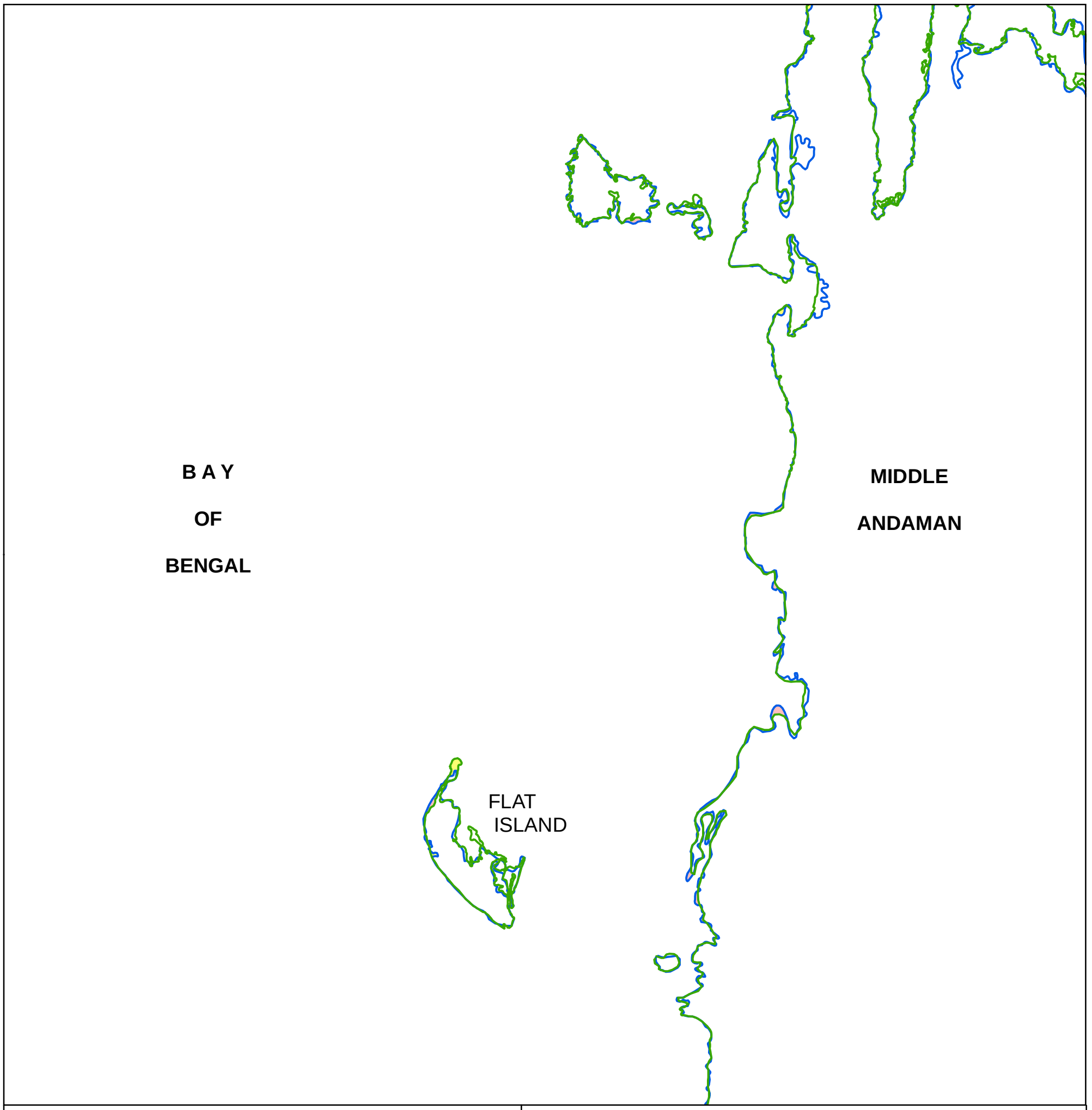
SHEET NO. 86D10SE



Legend

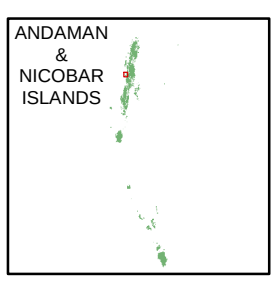
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	86D10 NE	86D14 NW
SEA		86D14 SW
SEA	86D11 NE	86D15 NW



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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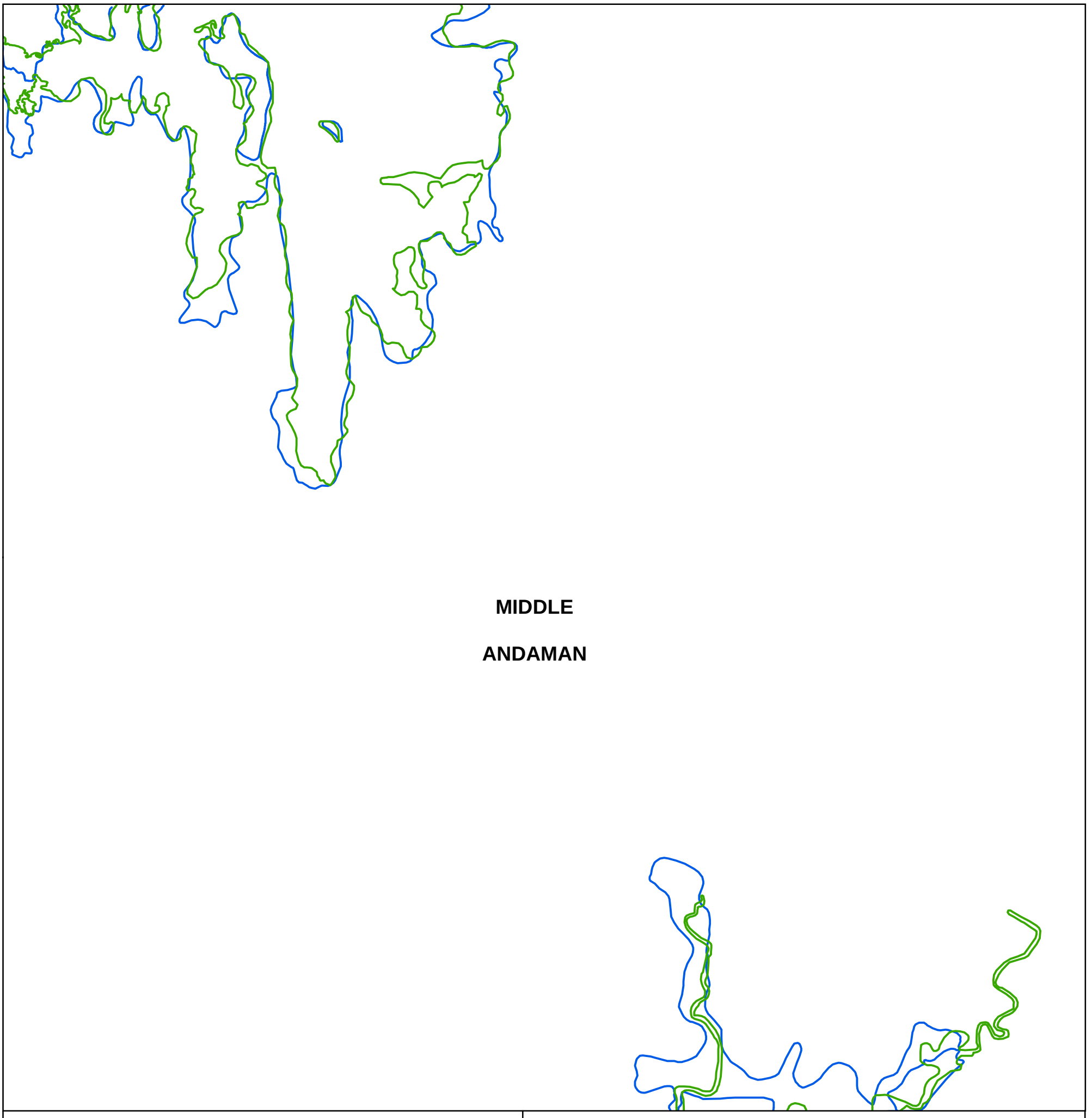
MIDDLE ANDAMAN

SHEET NO. 86D14SW



Legend

HIGH-TIDE LINE 2004-06

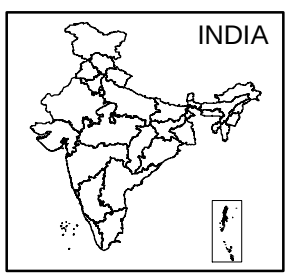
HIGH-TIDE LINE 1989-91

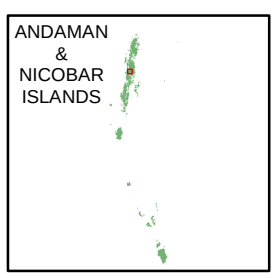
0 2

Scale in Km

INDEX TO SHEETS

86D10 NE	86D14 NW	86D14 NE
86D10 SE		86D14 SE
86D11 NE	86D15 NW	86D15 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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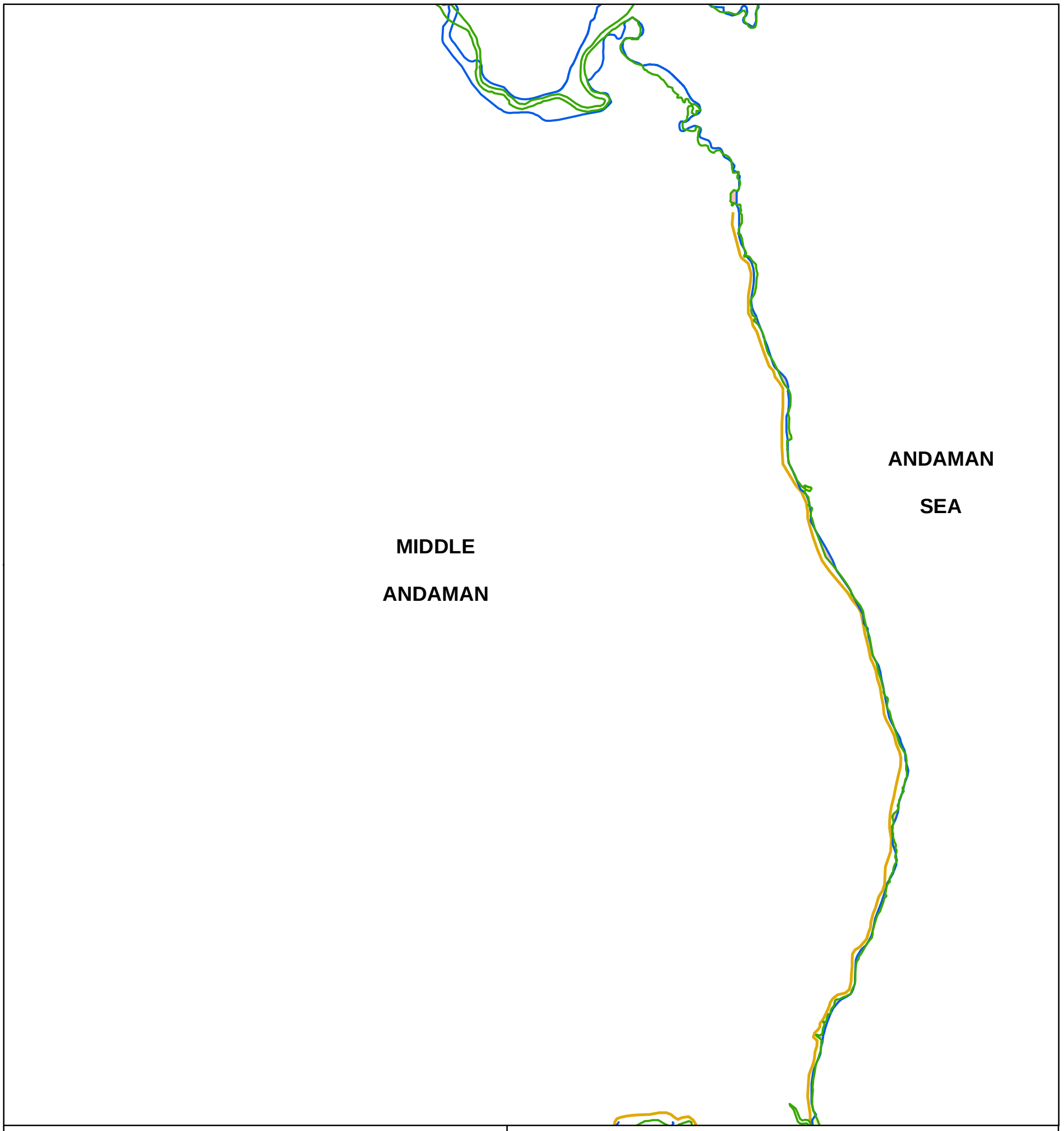
MIDDLE ANDAMAN

SHEET NO. 86D14SE



Legend

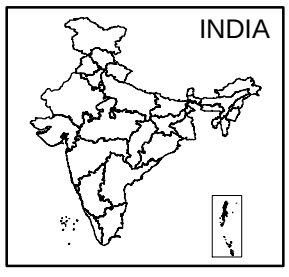
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

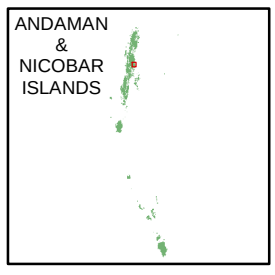
0 2

Scale in Km

INDEX TO SHEETS

86D14 NW	86D14 NE	SEA
86D14 SW		SEA
86D15 NW	86D15 NE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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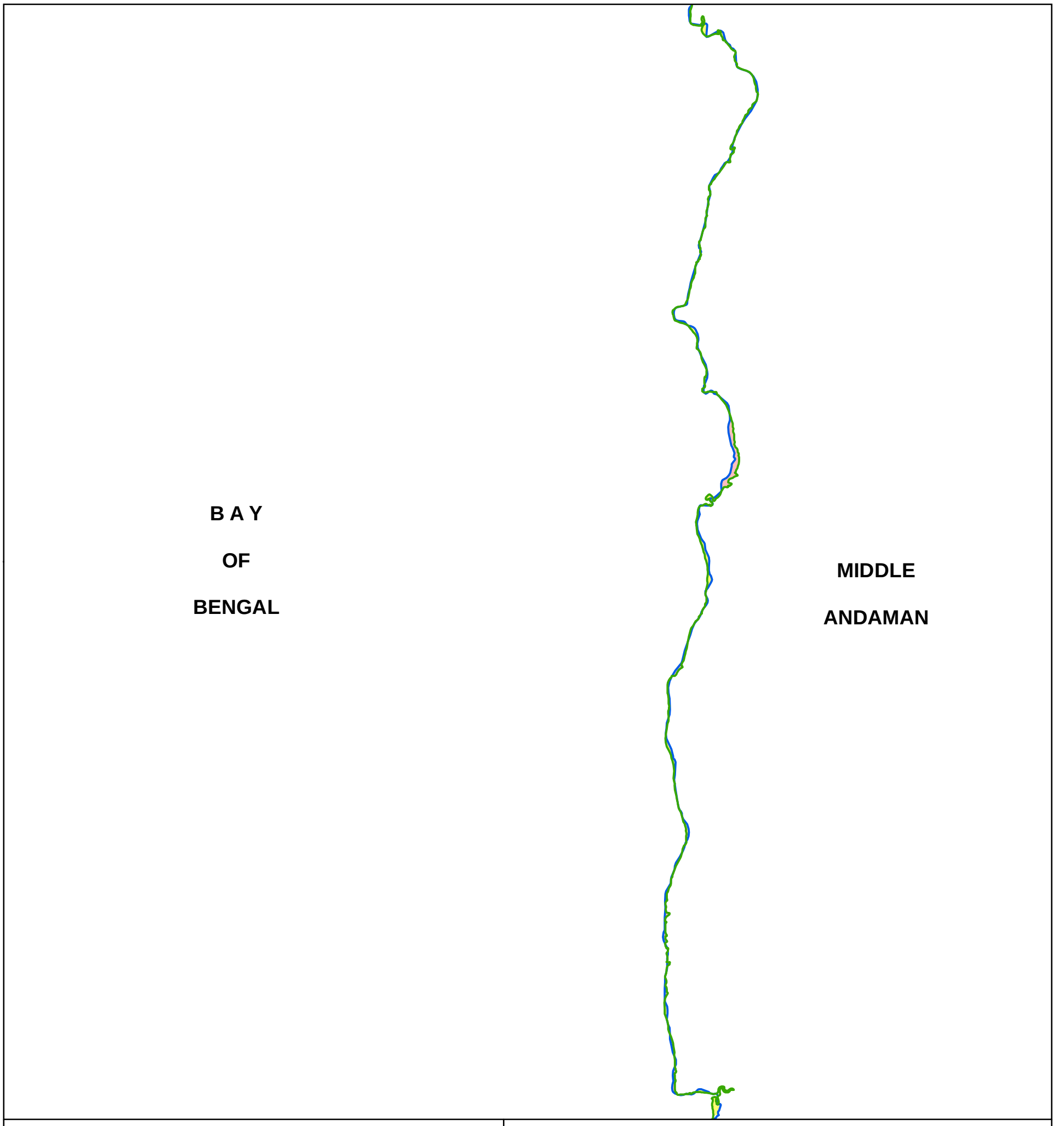
SHEET NO. 86D11NE



Legend

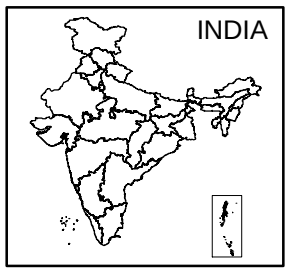
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

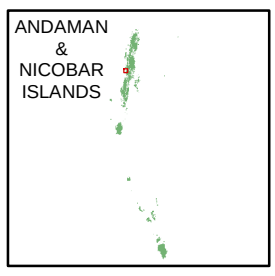
0 2

Scale in Km

INDEX TO SHEETS

SEA	86D10 SE	86D14 SW
SEA		86D15 NW
SEA	86D11 SE	86D15 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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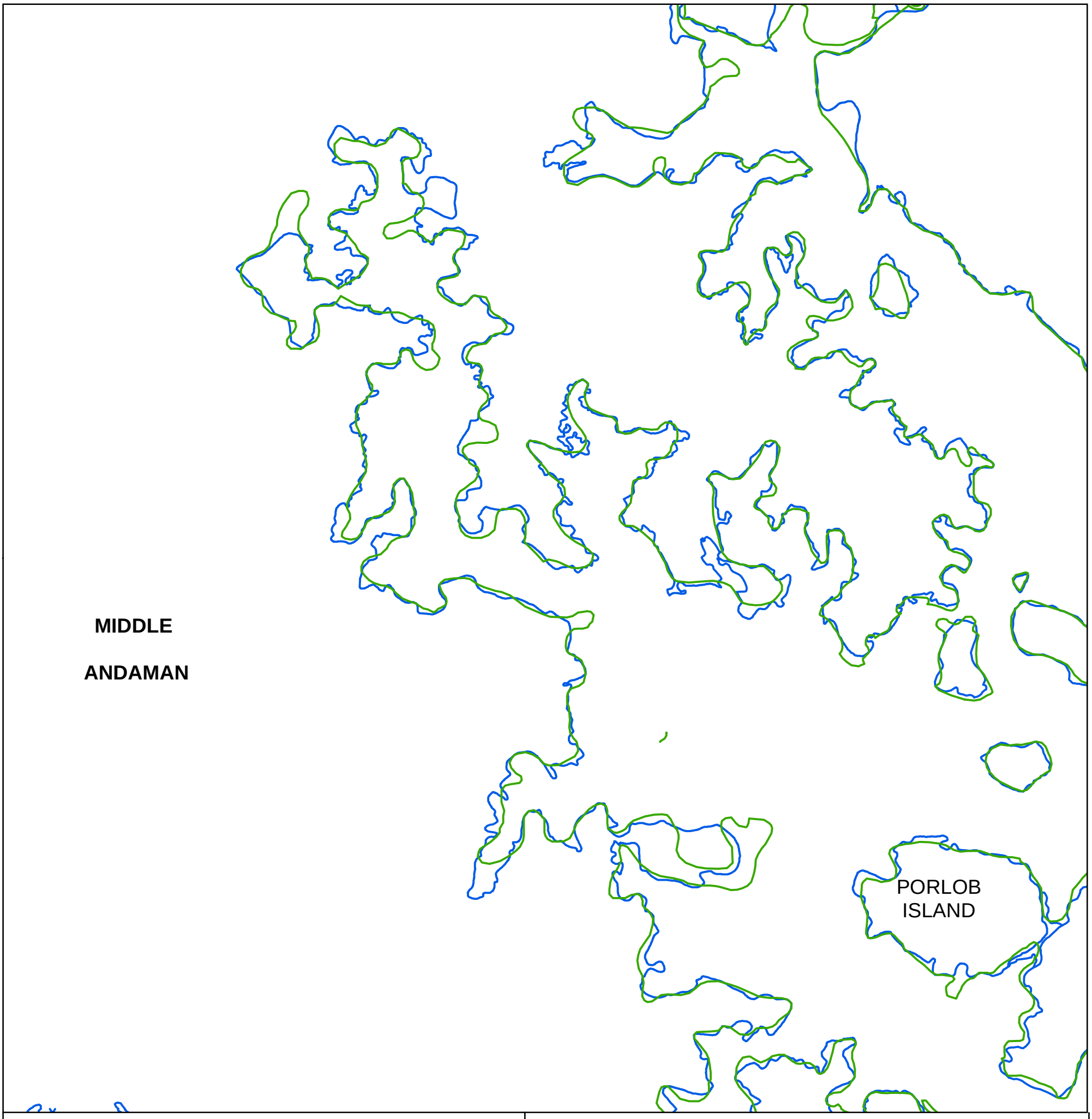
MIDDLE ANDAMAN

SHEET NO. 86D15NW



Legend

HIGH-TIDE LINE 2004-06

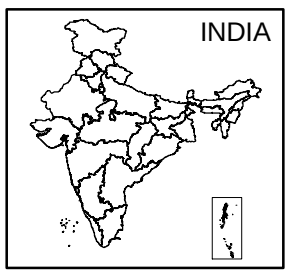
HIGH-TIDE LINE 1989-91

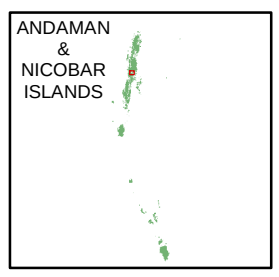
0 2

Scale in Km

INDEX TO SHEETS

86D10 SE	86D14 SW	86D14 SE
86D11 NE		86D15 NE
86D11 SE	86D15 SW	86D15 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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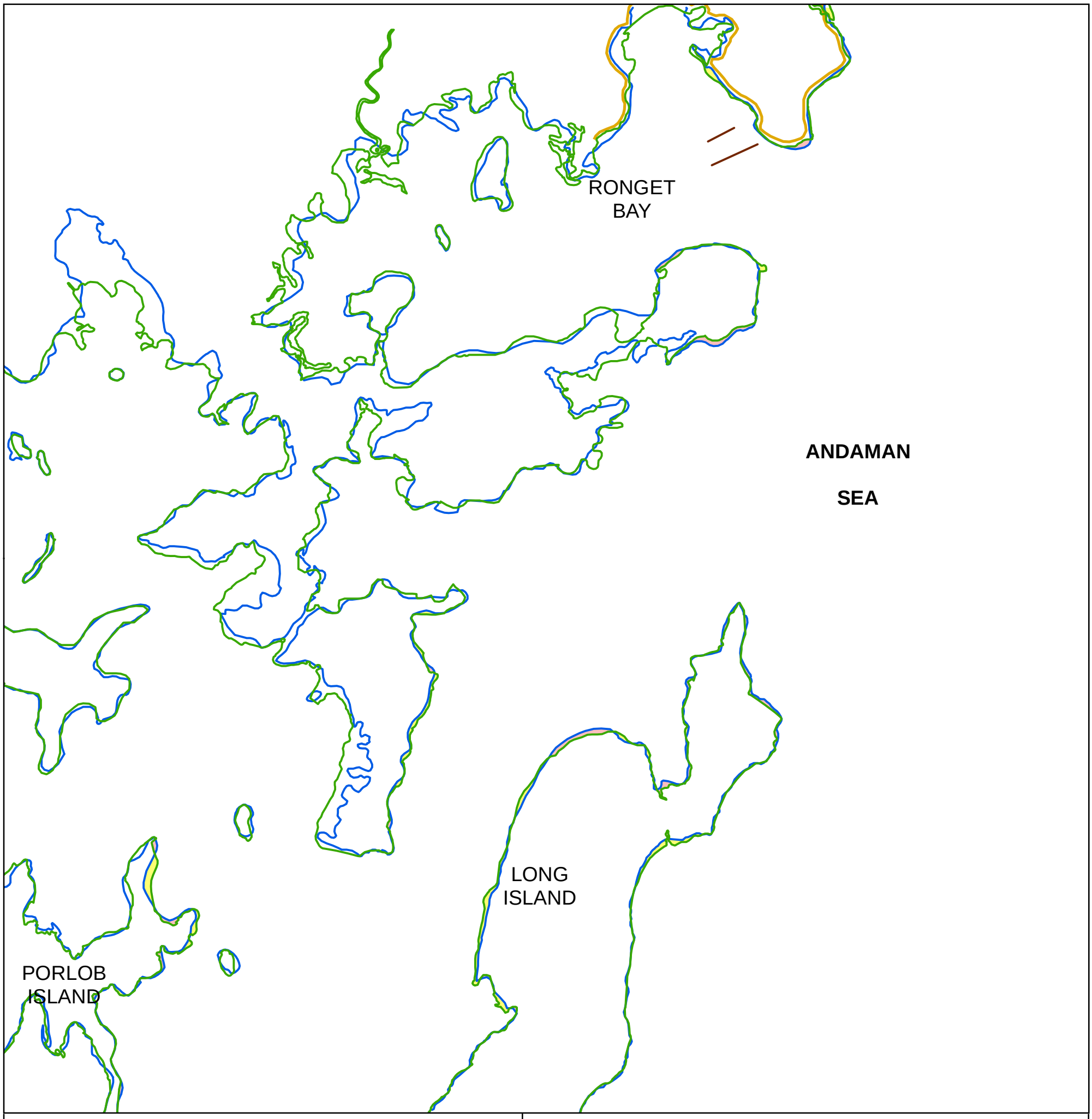
MIDDLE ANDAMAN

SHEET NO. 86D15NE



Legend

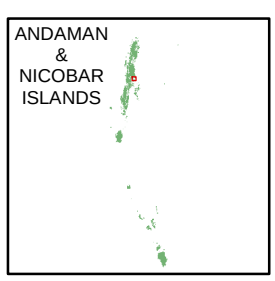
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL
- JETTY

0 2

Scale in Km

INDEX TO SHEETS

86D14 SW	86D14 SE	SEA
86D15 NW		SEA
86D15 SW	86D15 SE	86H03 SW



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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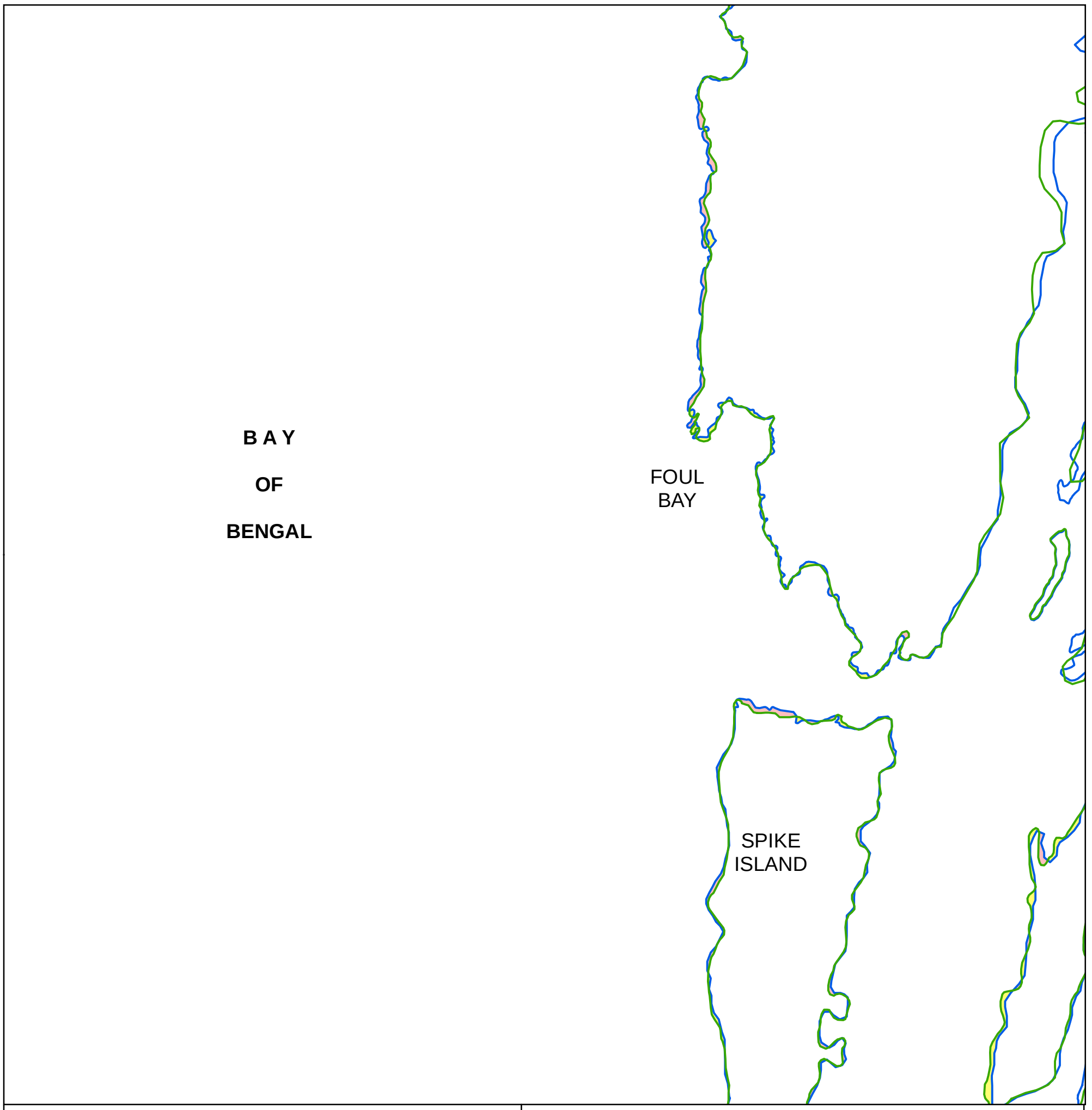
SHEET NO. 86D11SE



Legend

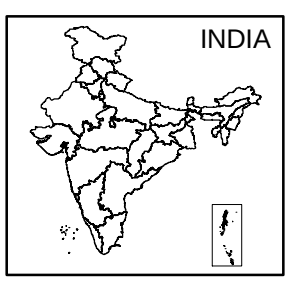
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

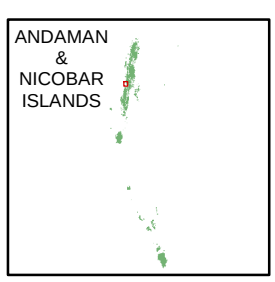
0 2

Scale in Km

INDEX TO SHEETS

SEA	86D11 NE	86D15 NW
SEA		86D15 SW
SEA	86D12 NE	86D16 NW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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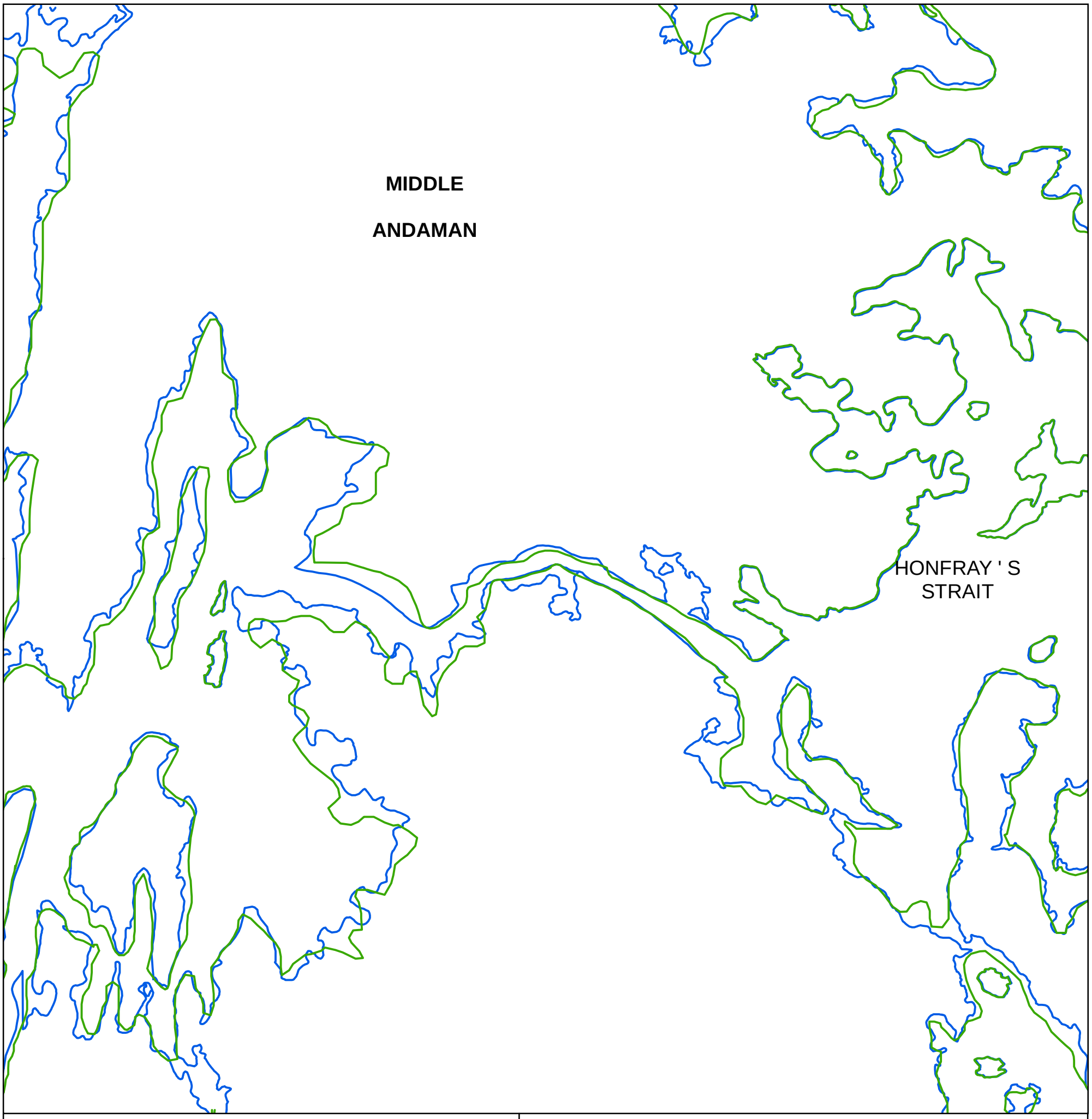
MIDDLE ANDAMAN

SHEET NO. 86D15SW



Legend

HIGH-TIDE LINE 2004-06

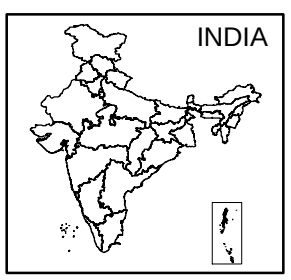
HIGH-TIDE LINE 1989-91

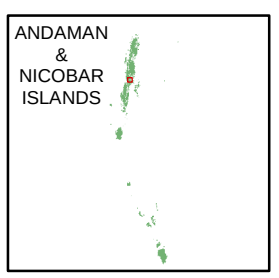
0 2

Scale in Km

INDEX TO SHEETS

86D11 NE	86D15 NW	86D15 NE
86D11 SE		86D15 SE
86D12 NE	86D16 NW	86D16 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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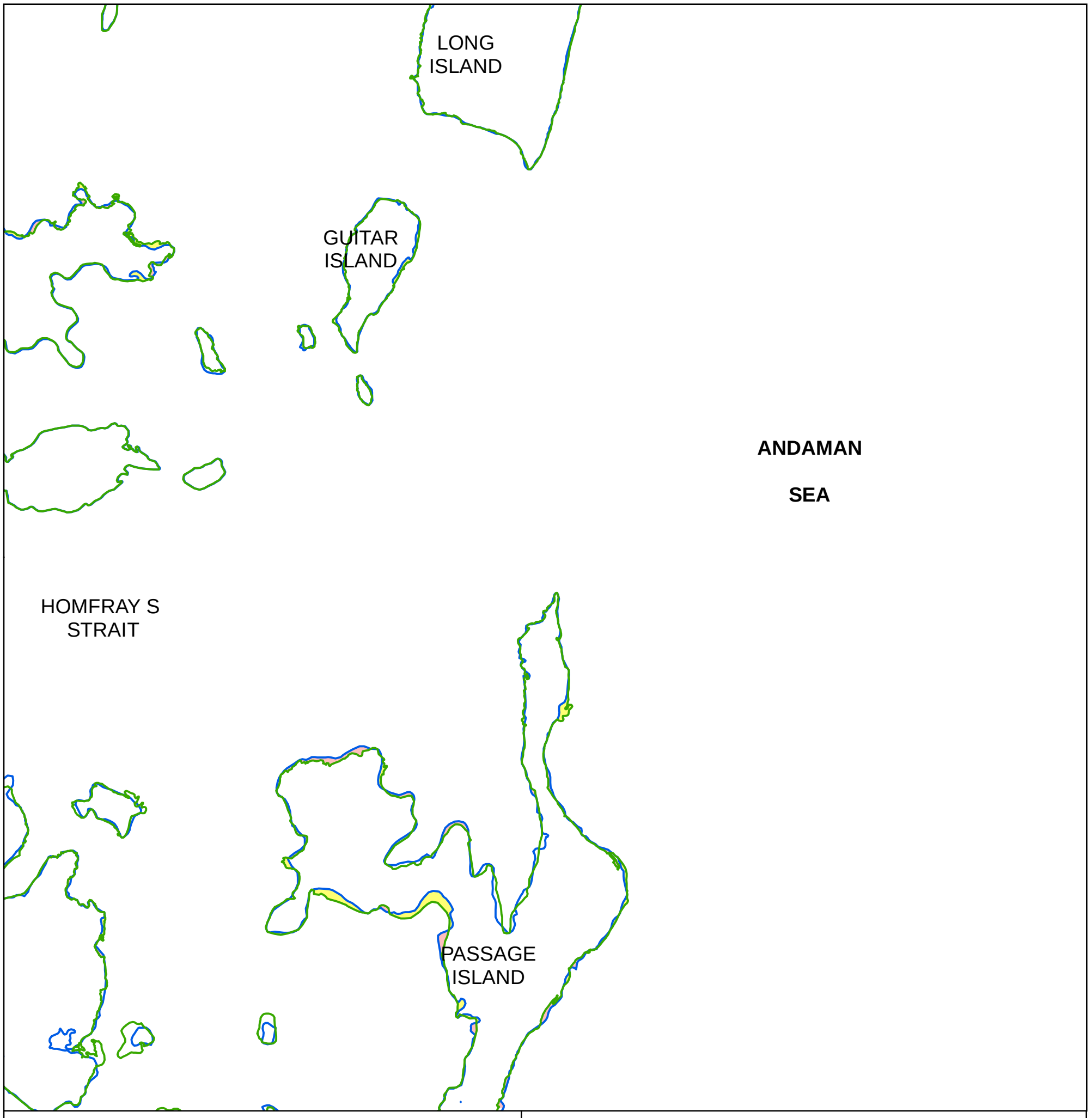
SHEET NO. 86D15SE



Legend

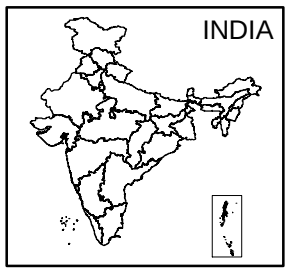
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

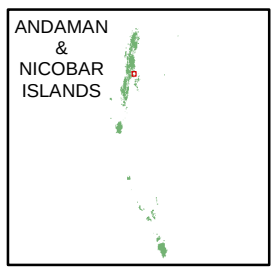
0 2

Scale in Km

INDEX TO SHEETS

86D15 NW	86D15 NE	SEA
86D15 SW		86H03 SW
86D16 NW	86D16 NE	86H04 NW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

MIDDLE ANDAMAN

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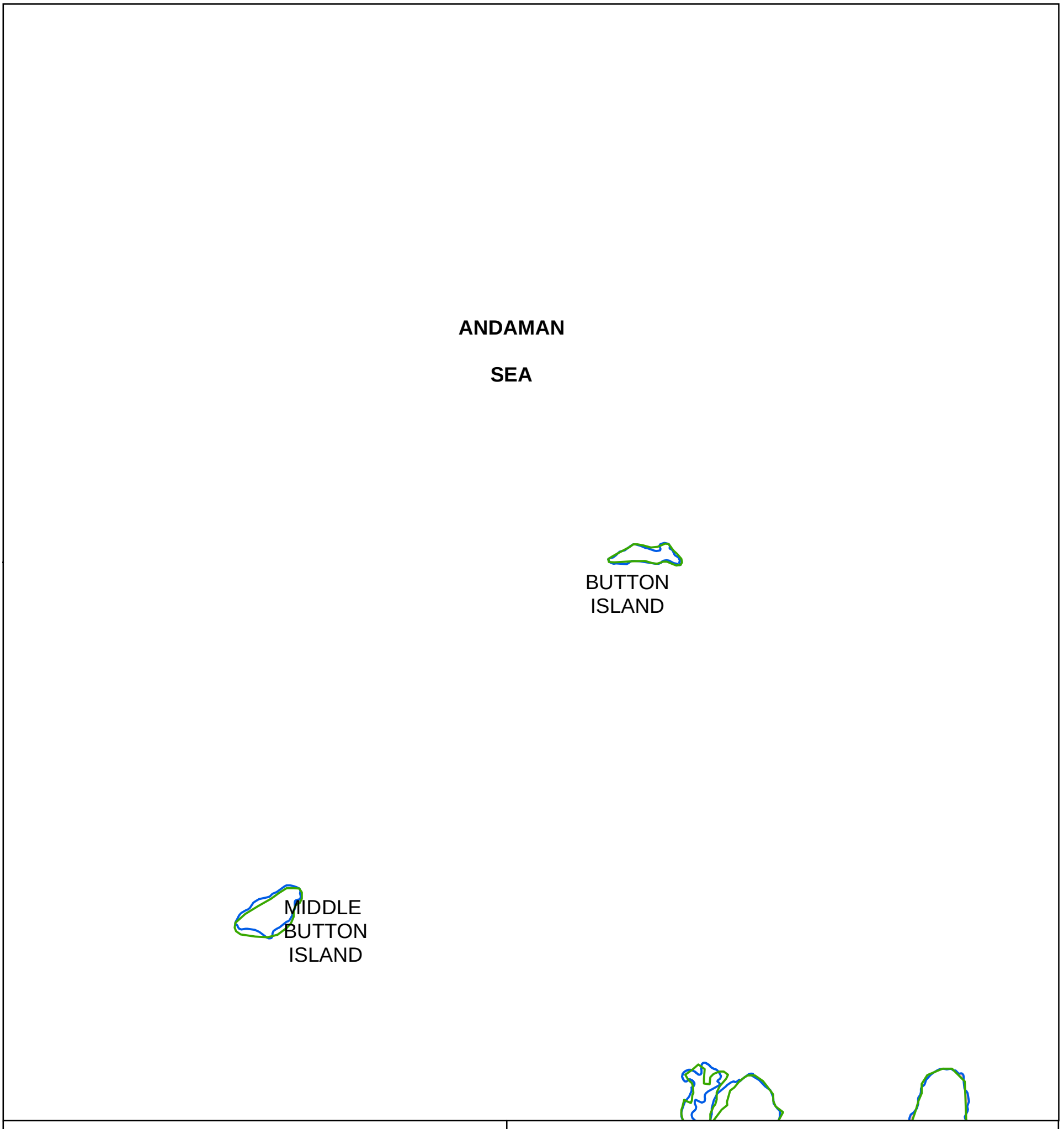
SHEET NO. 86H03SW



Legend

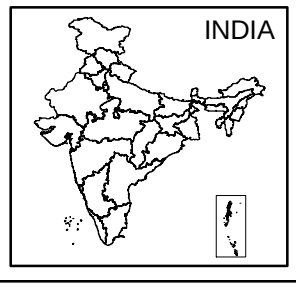
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

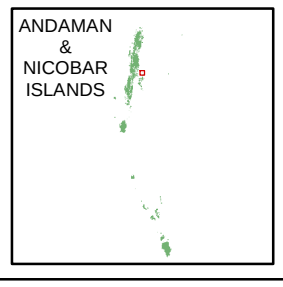
0 2

Scale in Km

INDEX TO SHEETS

86D15 NE	SEA	SEA
86D15 SE		SEA
86D16 NE	86H04 NW	86H04 NE





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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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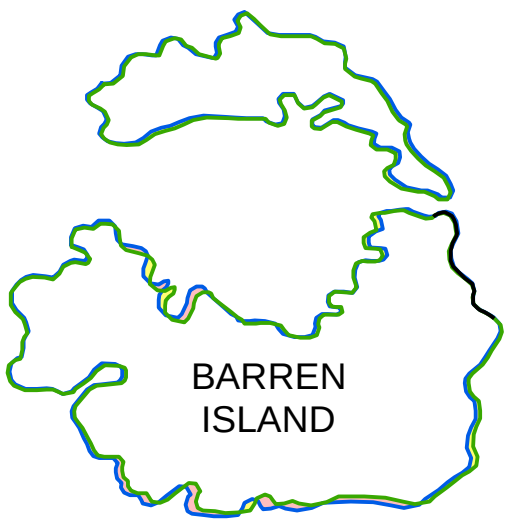
SHEET NO. 86H15SW

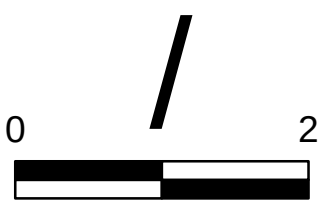
ANDAMAN

SEA



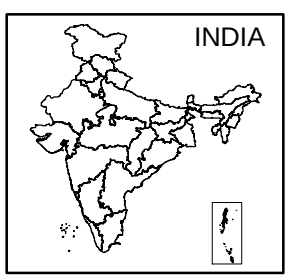
Legend

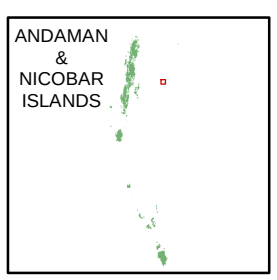
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
SPACE APPLICATIONS CENTRE, AHMEDABAD
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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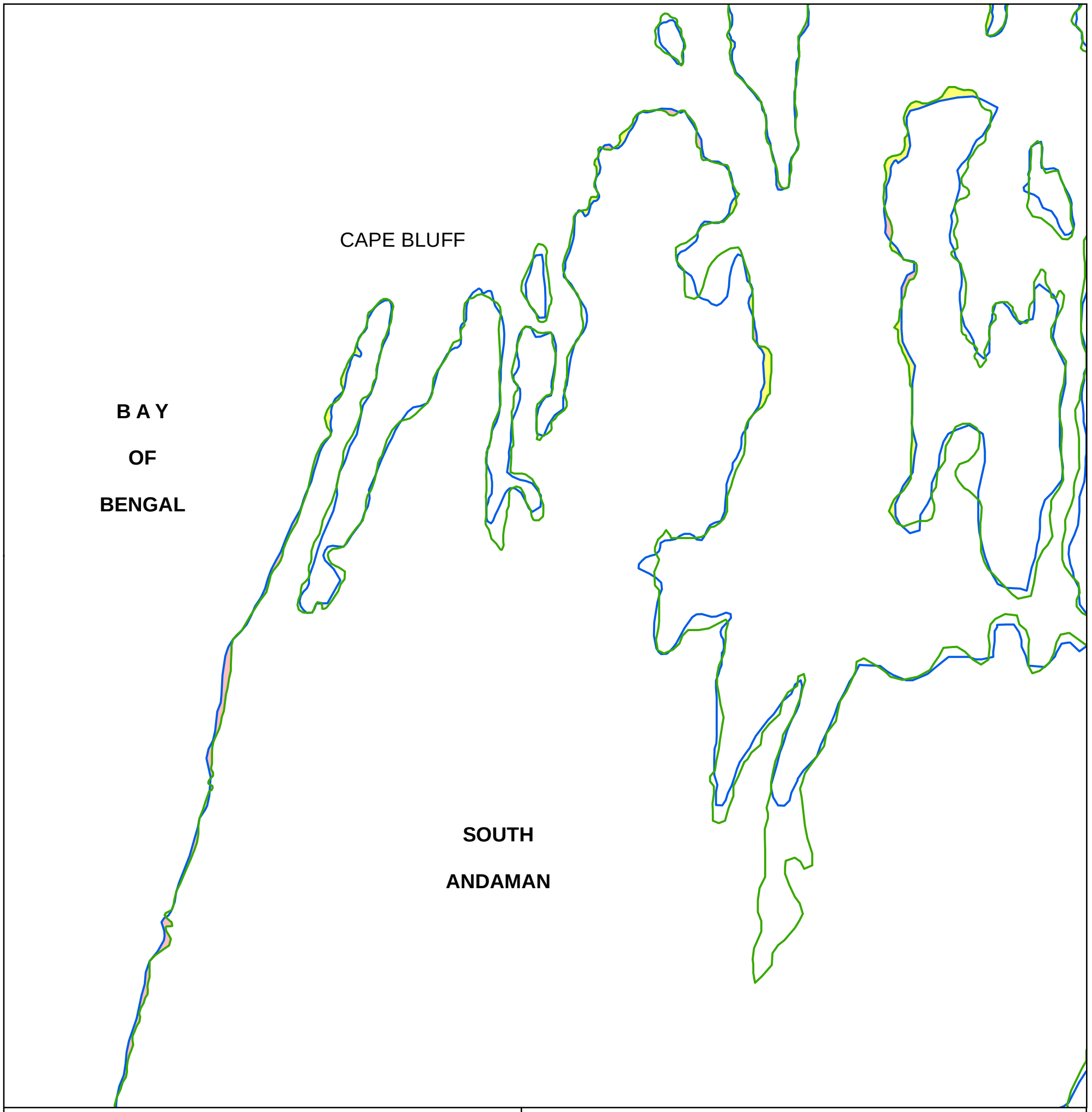
SHEET NO. 86D12NE

SOUTH ANDAMAN



Legend

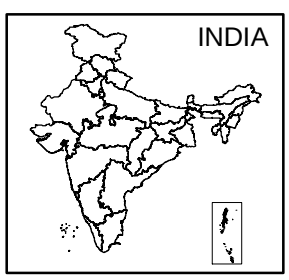
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

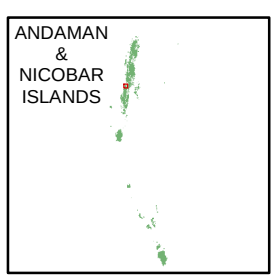
0 2

Scale in Km

INDEX TO SHEETS

SEA	86D11 SE	86D15 SW
SEA		86D16 NW
86D12 SW	86D12 SE	86D16 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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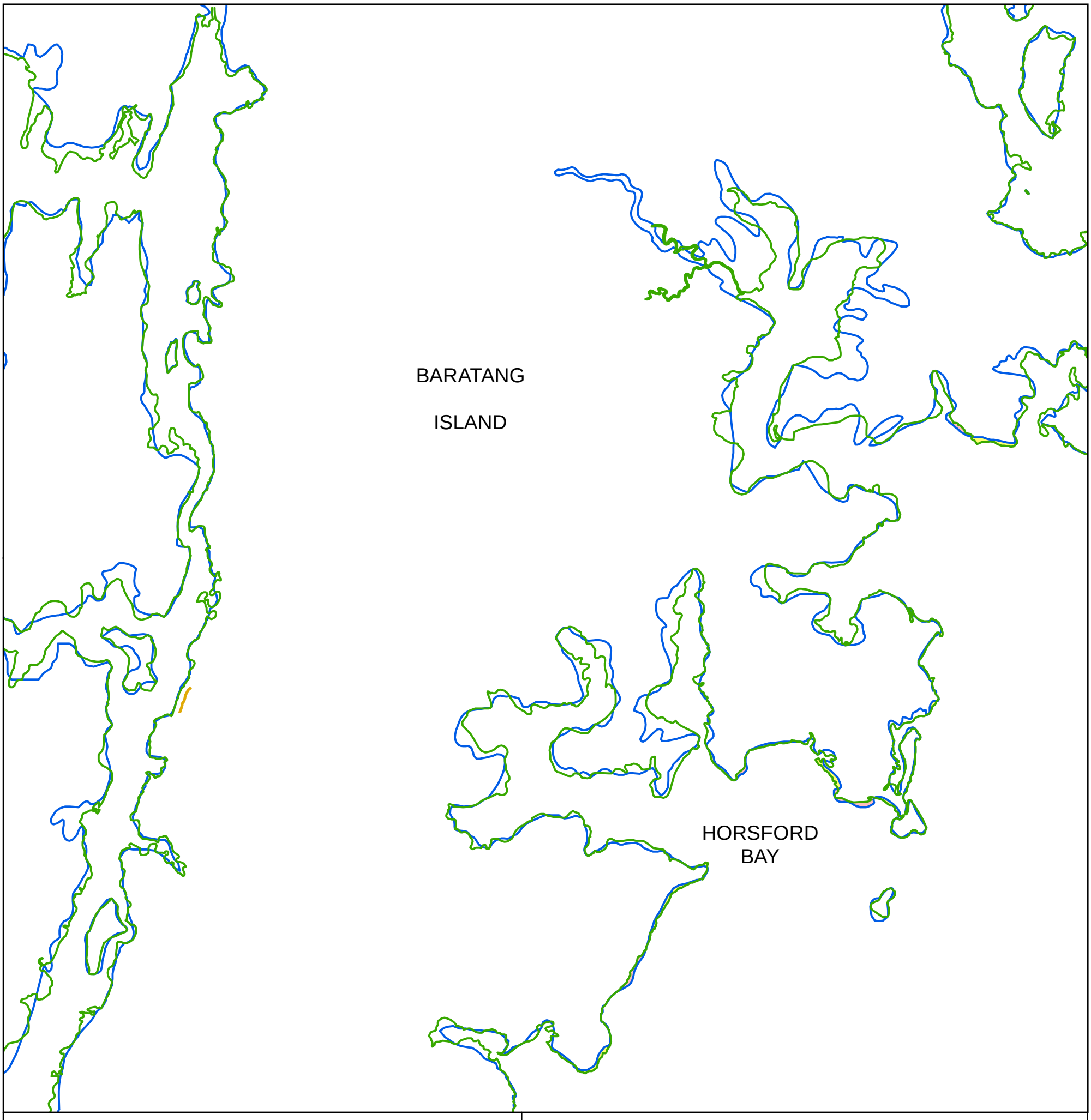
SHEET NO. 86D16NW



Legend

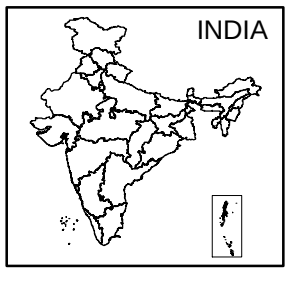
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

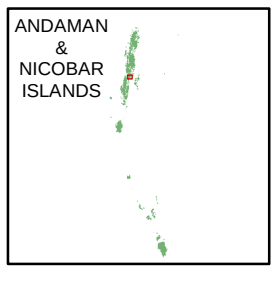
0 2

Scale in Km

INDEX TO SHEETS

86D11 SE	86D15 SW	86D15 SE
86D12 NE		86D16 NE
86D12 SE	86D16 SW	86D16 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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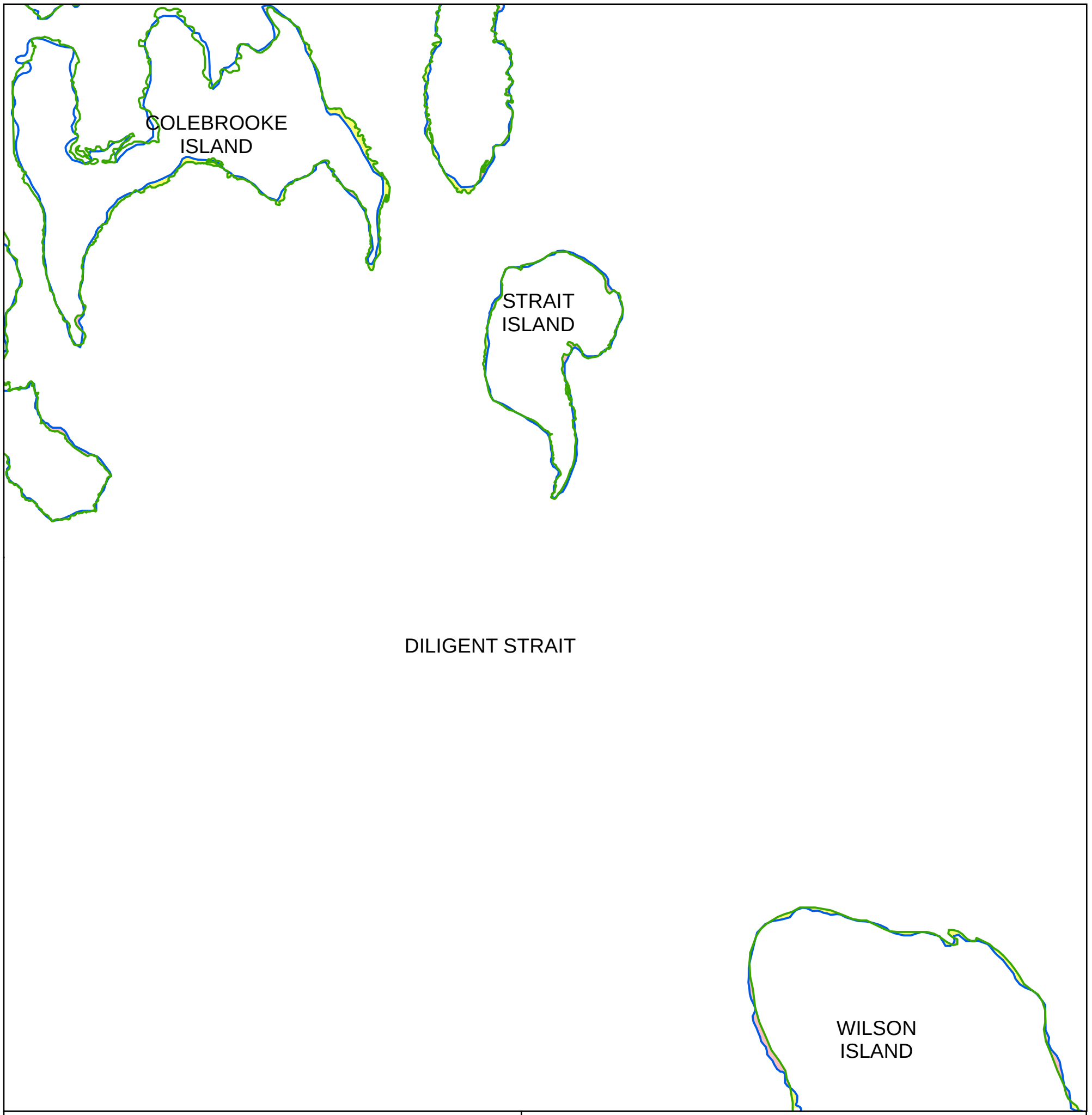
SHEET NO. 86D16NE

MIDDLE ANDAMAN



Legend

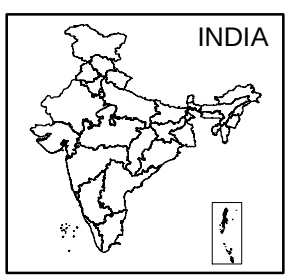
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

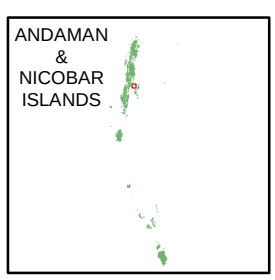
0 2

Scale in Km

INDEX TO SHEETS

86D15 SW	86D15 SE	86H03 SW
86D16 NW		86H04 NW
86D16 SW	86D16 SE	86H04 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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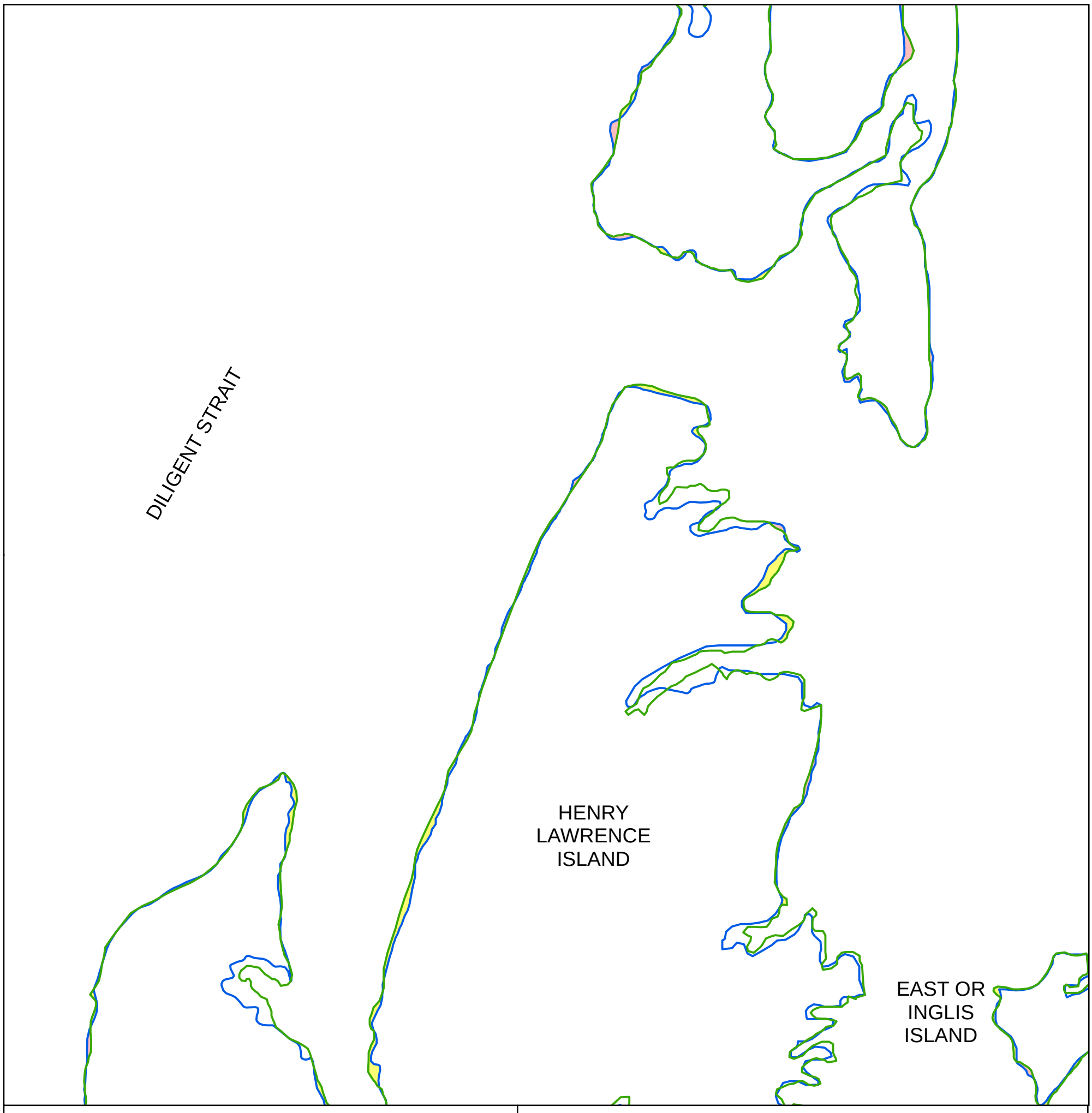
MIDDLE ANDAMAN

SHEET NO. 86H04NW



Legend

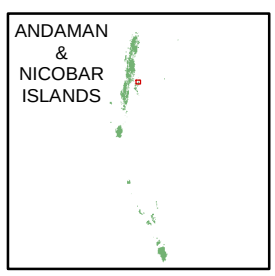
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86D15 SE	86H03 SW	SEA
86D16 NE		86H04 NE
86D16 SE	86H04 SW	SEA



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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MIDDLE ANDAMAN

SHEET NO. 86H04NE

ANDAMAN SEA

Legend

EROSION

ACCRETION

HIGH-TIDE LINE 2004-06

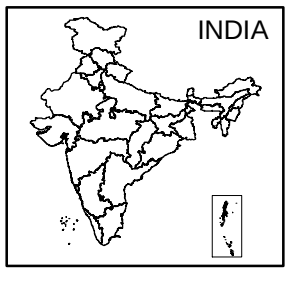
HIGH-TIDE LINE 1989-91

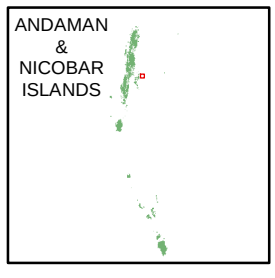
0 2

Scale in Km

INDEX TO SHEETS

86H03 SW	SEA	SEA
86H04 NW		SEA
86H04 SW	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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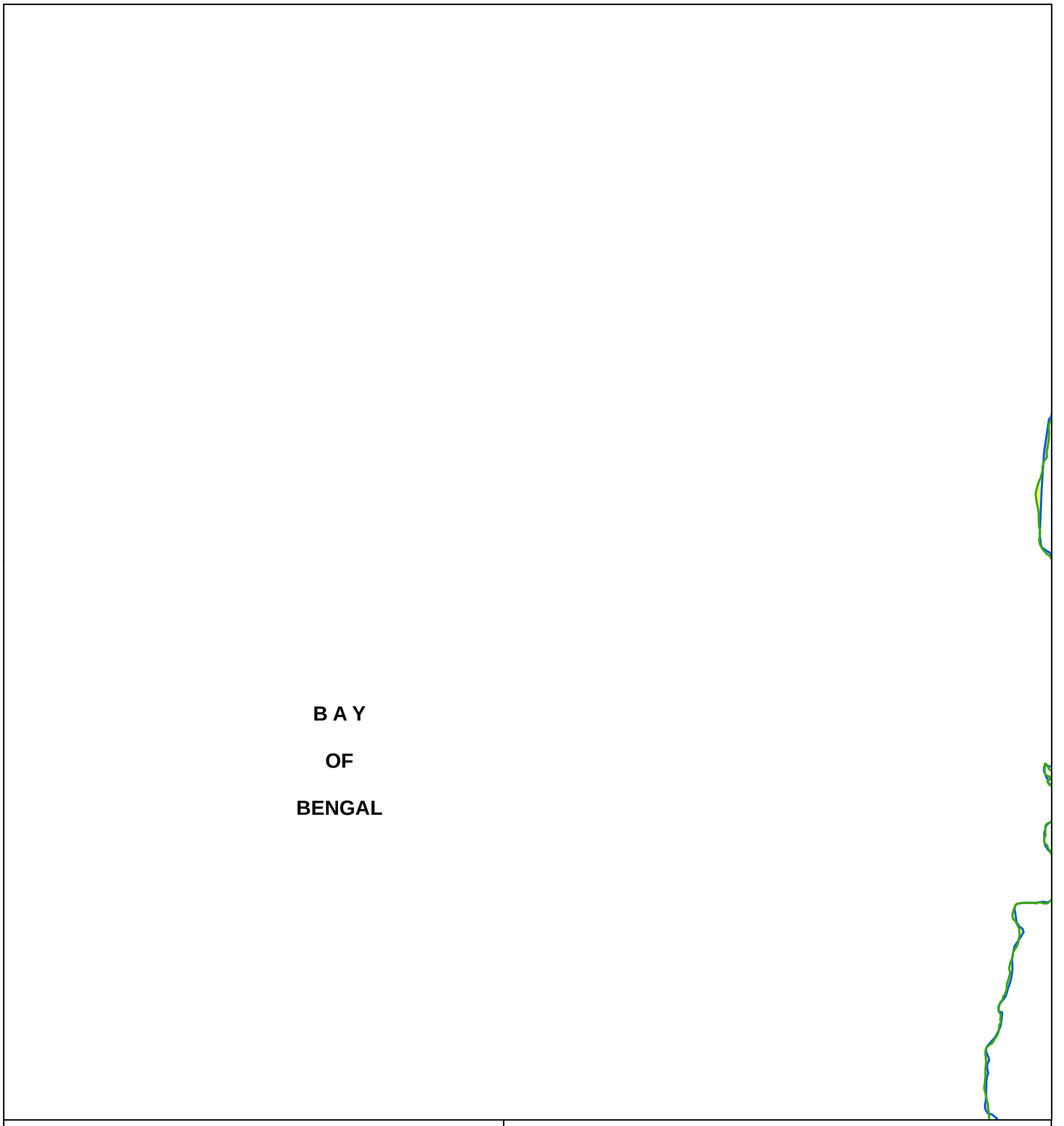
SOUTH ANDAMAN

SHEET NO. 86D12SW



Legend

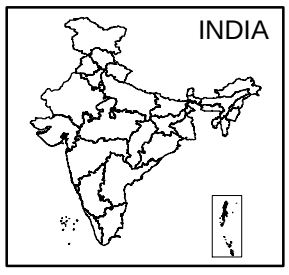
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

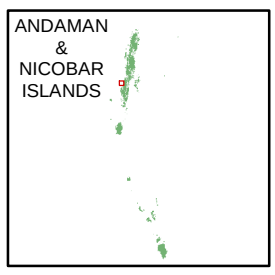
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	86D12 NE
SEA		86D12 SE
SEA	87A09 NW	87A09 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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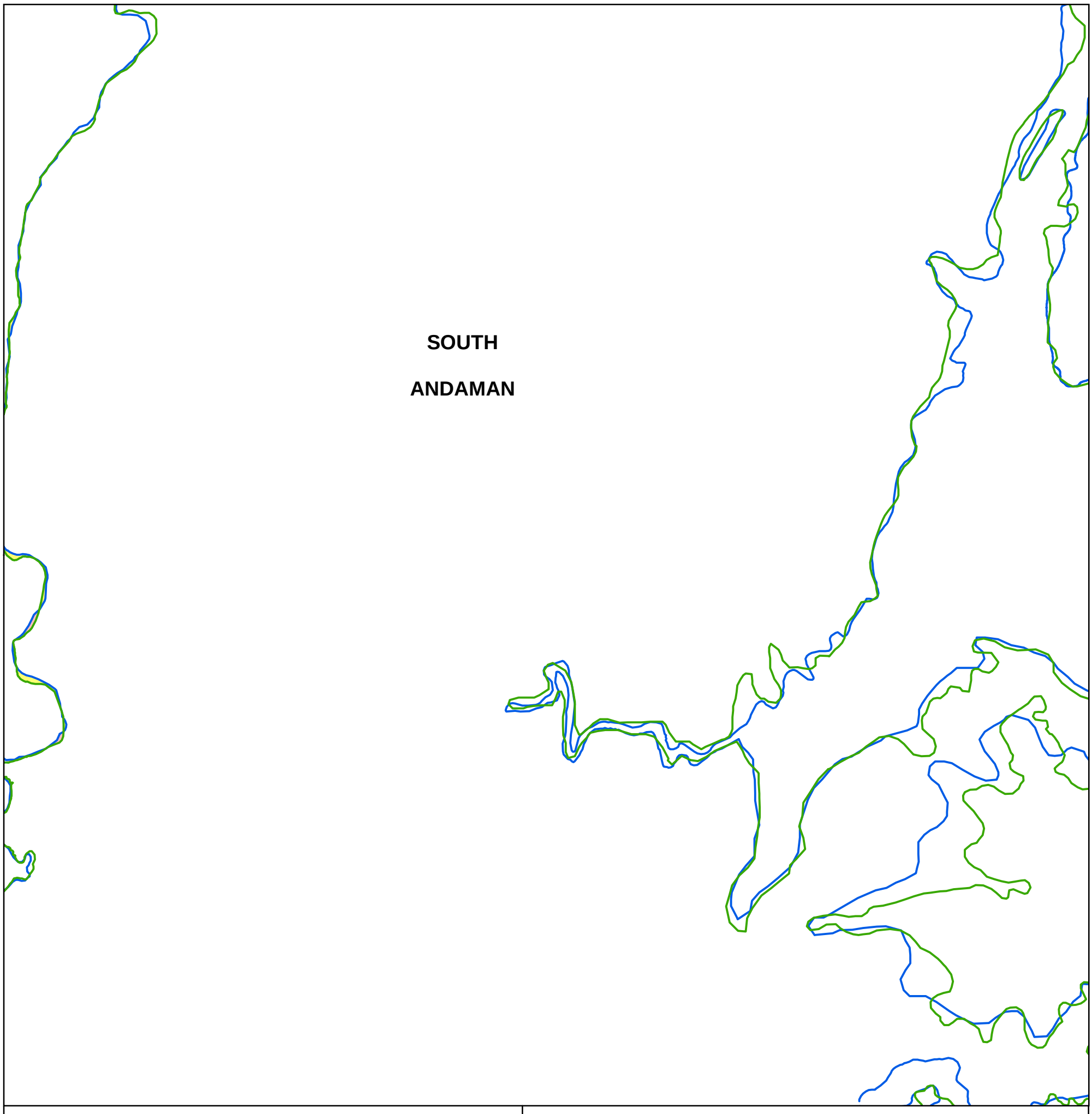
SOUTH ANDAMAN

SHEET NO. 86D12SE



Legend

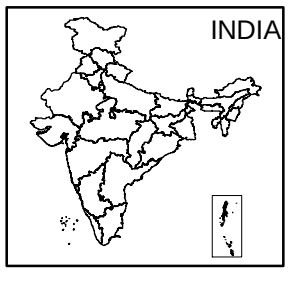
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

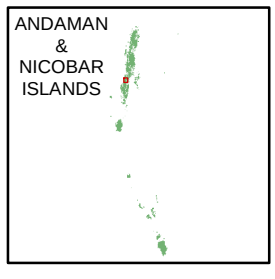
0 2

Scale in Km

INDEX TO SHEETS

SEA	86D12 NE	86D16 NW
86D12 SW		86D16 SW
87A09 NW	87A09 NE	87A13 NW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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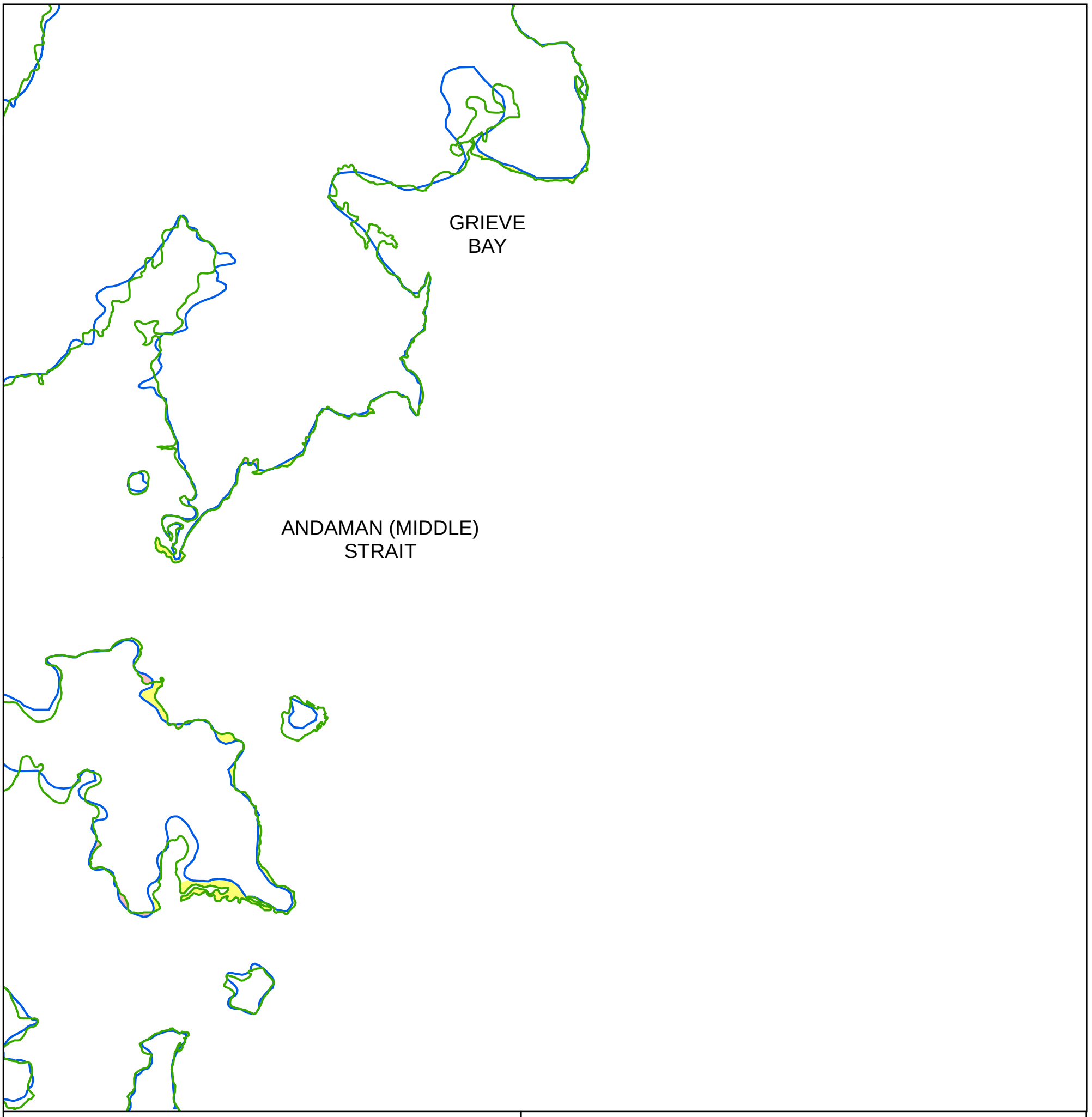
MIDDLE ANDAMAN

SHEET NO. 86D16SW



Legend

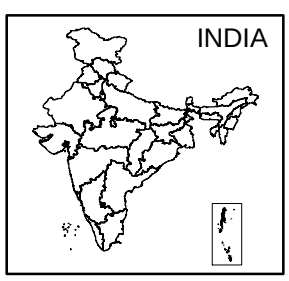
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

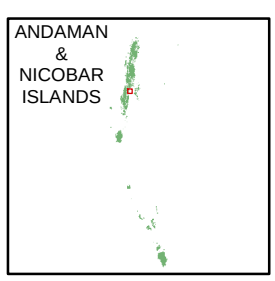
0 2

Scale in Km

INDEX TO SHEETS

86D12 NE	86D16 NW	86D16 NE
86D12 SE		86D16 SE
87A09 NE	87A13 NW	87A13 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 86D16SE

MIDDLE ANDAMAN

NICHOLSON ISLAND

PEEL ISLAND

HAVELOCK ISLAND

Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

0 2

Scale in Km

INDEX TO SHEETS

86D16 NW	86D16 NE	86H04 NW
86D16 SW		86H04 SW
87A13 NW	87A13 NE	87E01 NW

INDIA

ANDAMAN & NICOBAR ISLANDS

DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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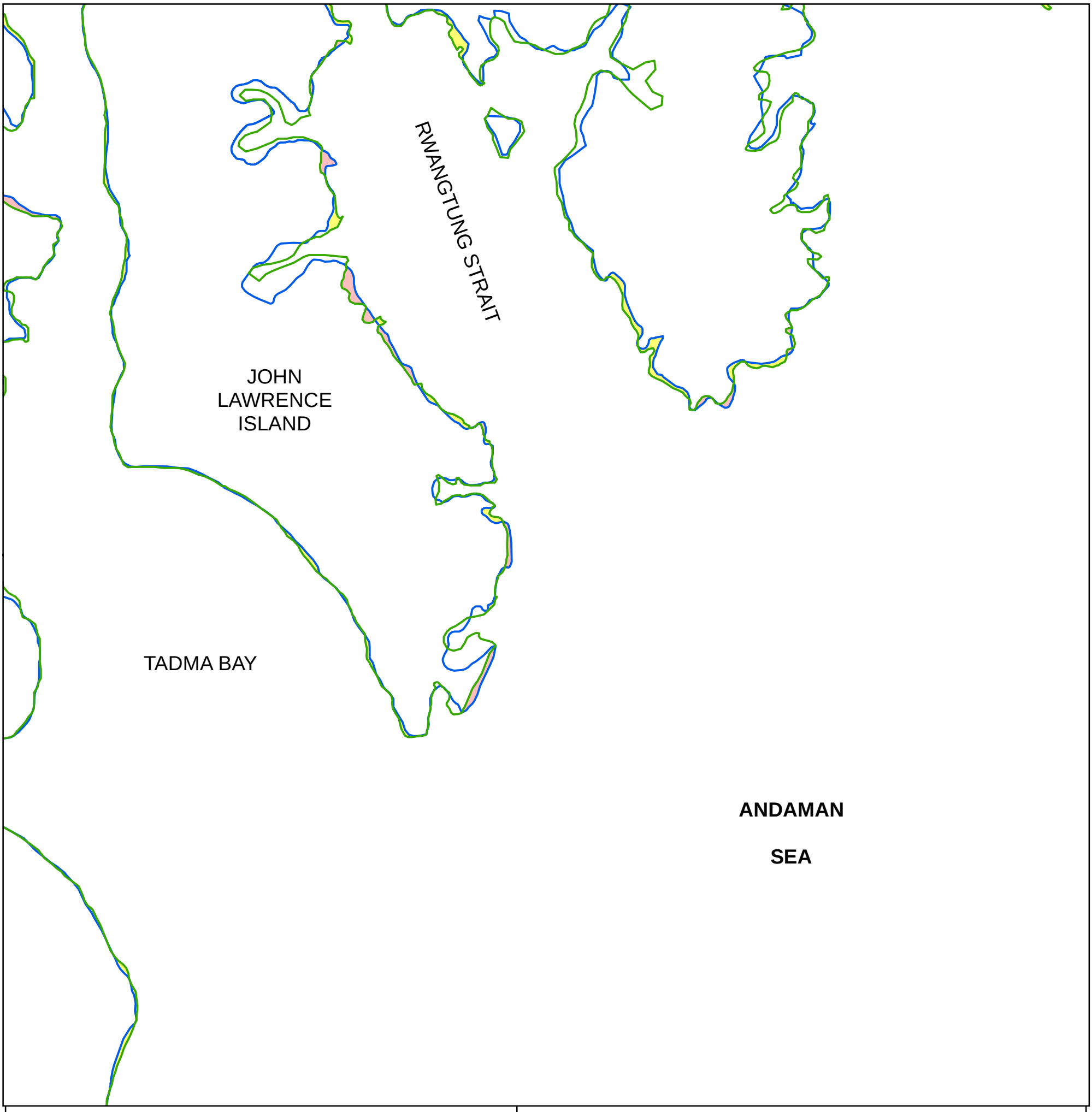
MIDDLE ANDAMAN

SHEET NO. 86H04SW



Legend

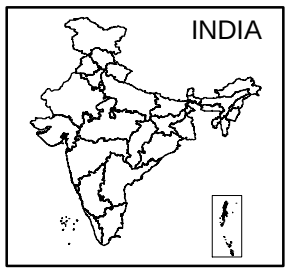
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

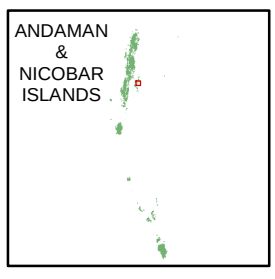
0 2

Scale in Km

INDEX TO SHEETS

86D16 NE	86H04 NW	86H04 NE
86D16 SE		SEA
87A13 NE	87E01 NW	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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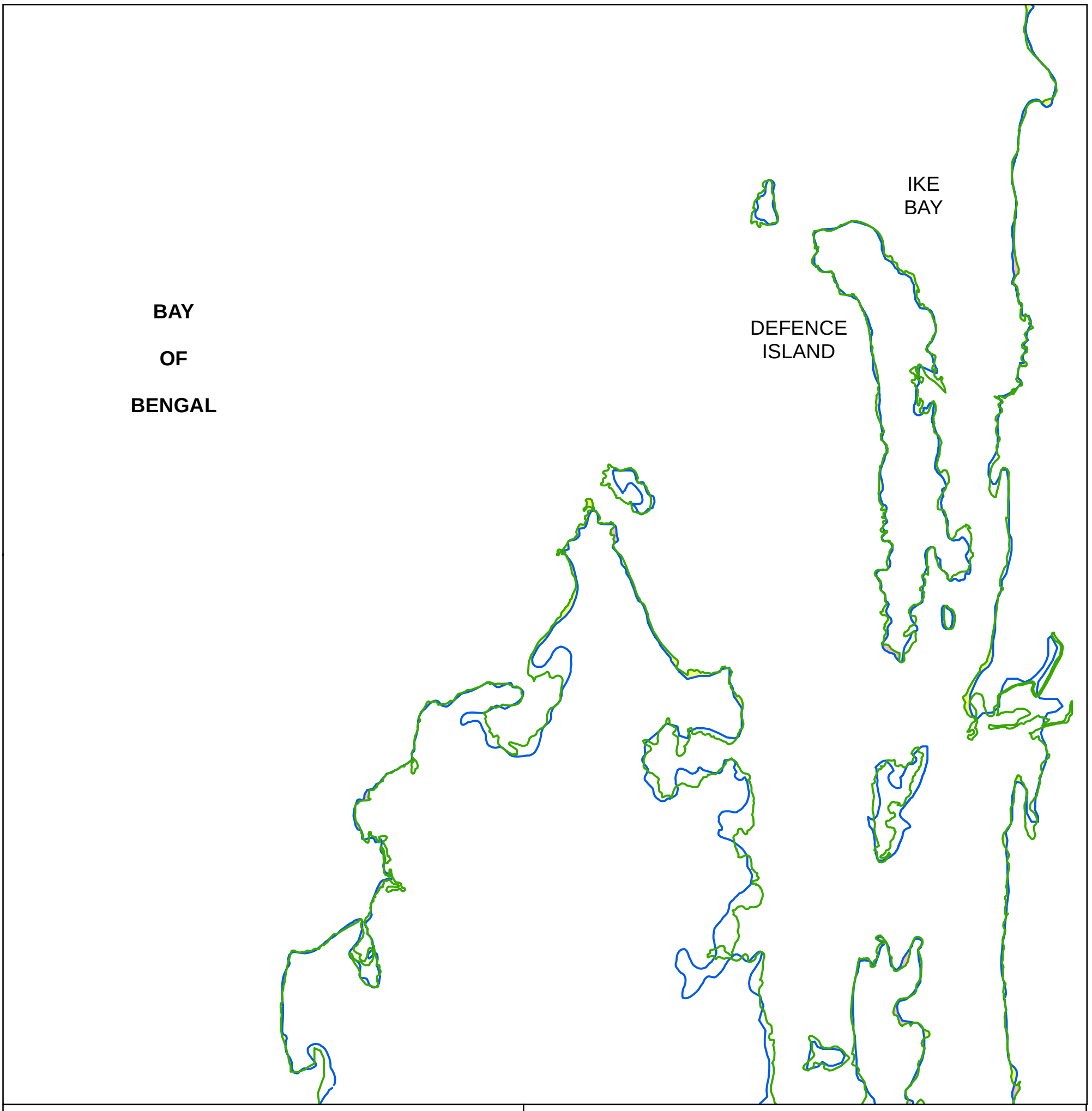
SOUTH ANDAMAN

SHEET NO. 87A09NW



Legend

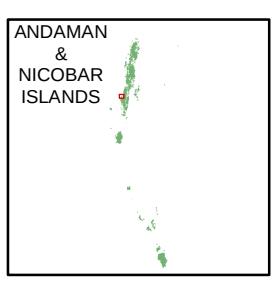
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	86D12 SW	86D12 SE
SEA		87A09 NE
SEA	87A09 SW	87A09 SE



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

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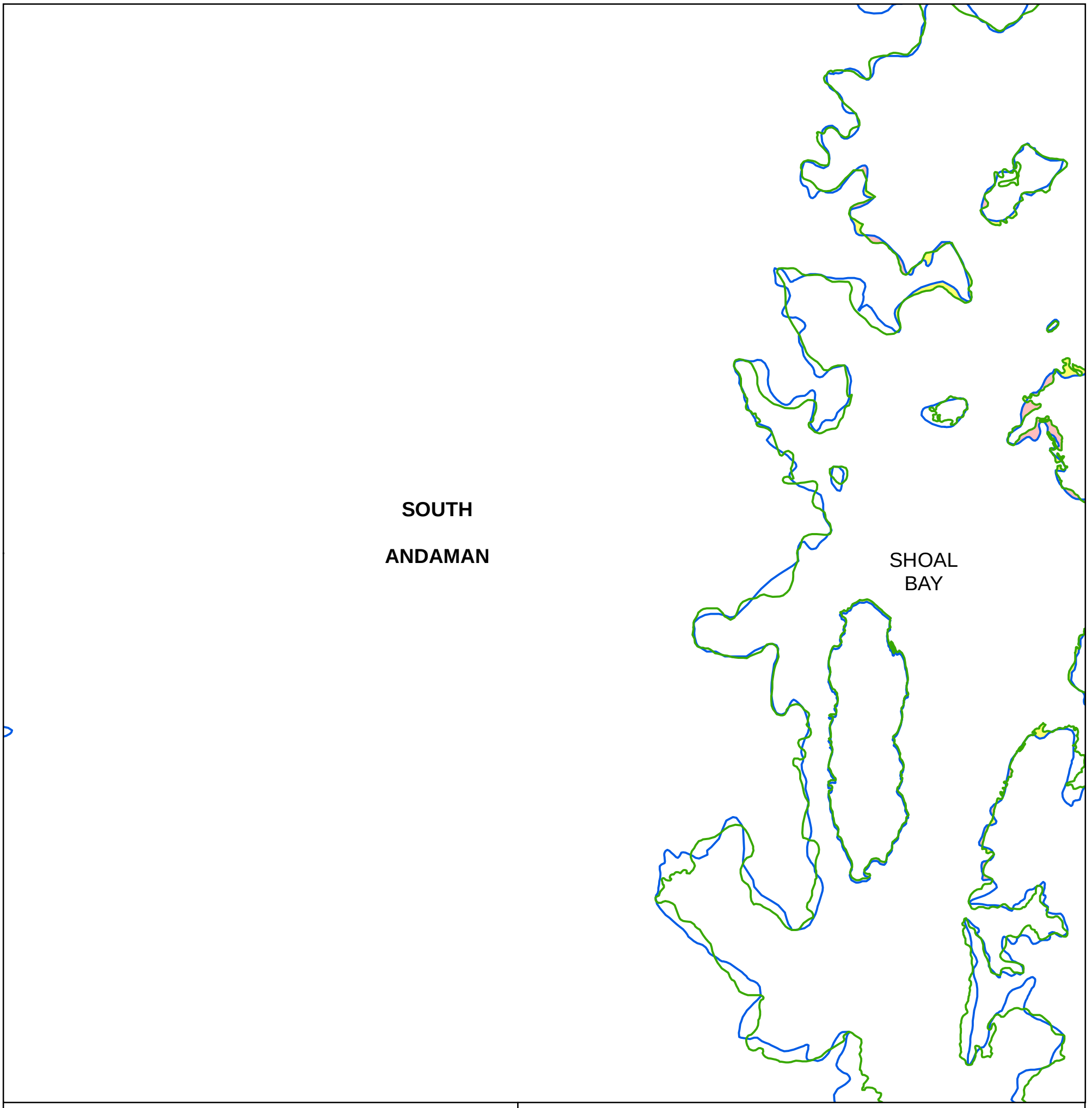
SHEET NO. 87A09NE



Legend

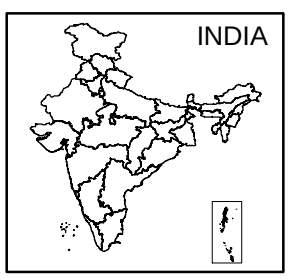
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

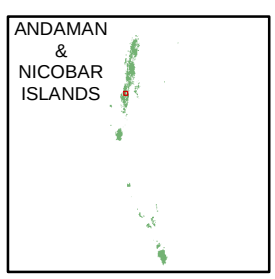
0 2

Scale in Km

INDEX TO SHEETS

86D12 SW	86D12 SE	86D16 SW
87A09 NW		87A13 NW
87A09 SW	87A09 SE	87A13 SW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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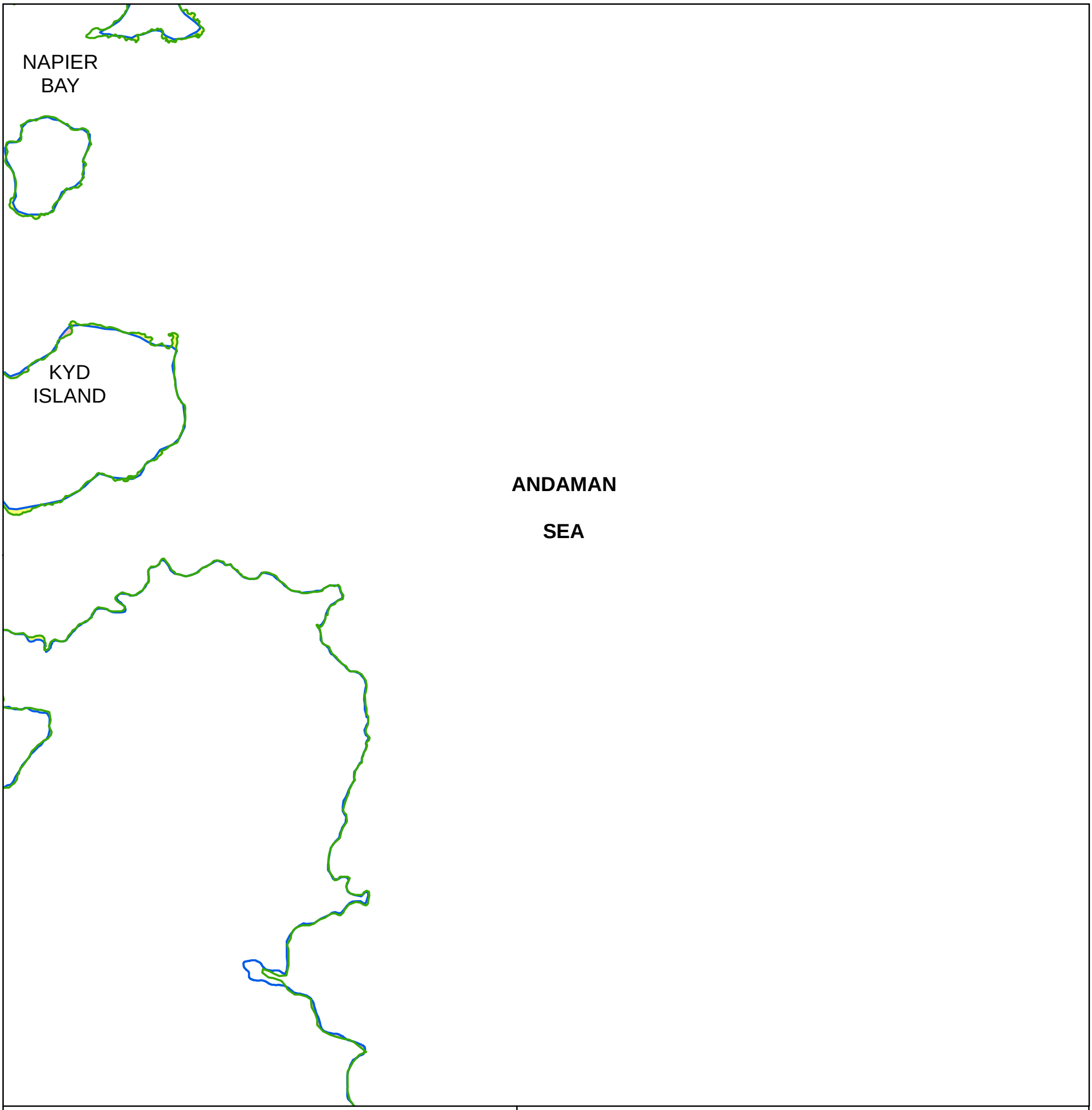
SOUTH ANDAMAN

SHEET NO. 87A13NW



Legend

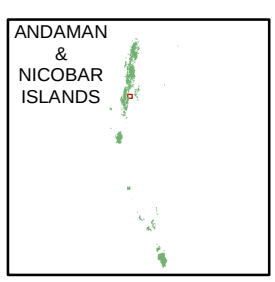
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86D12 SE	86D16 SW	86D16 SE
87A09 NE		87A13 NE
87A09 SE	87A13 SW	SEA



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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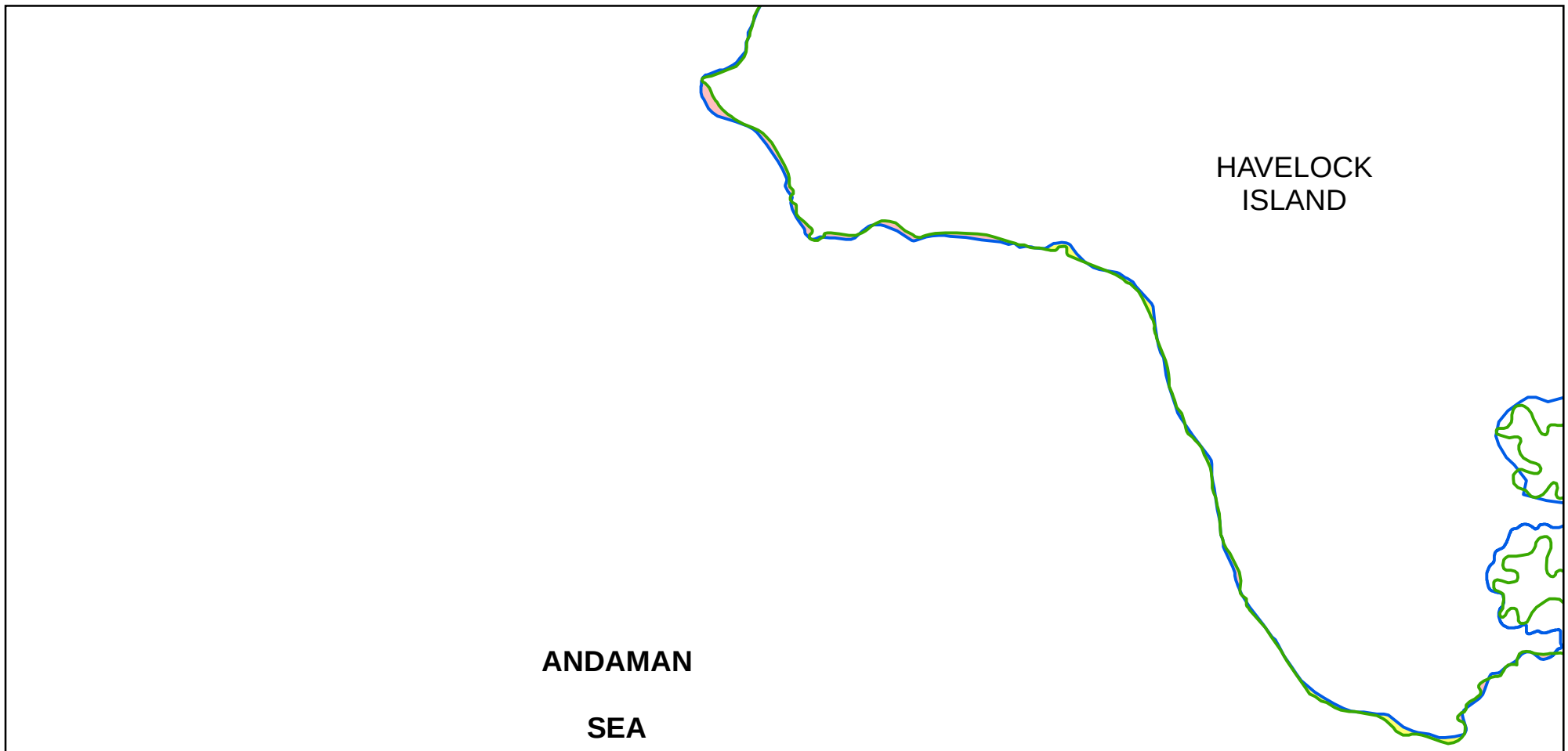
SOUTH ANDAMAN

SHEET NO. 87A13NE



Legend

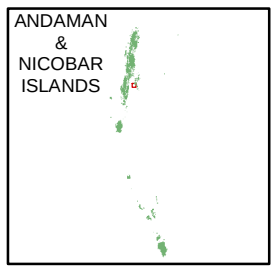
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

86D16 SW	86D16 SE	86H04 SW
87A13 NW		87E01 NW
87A13 SW	SEA	87E01 SW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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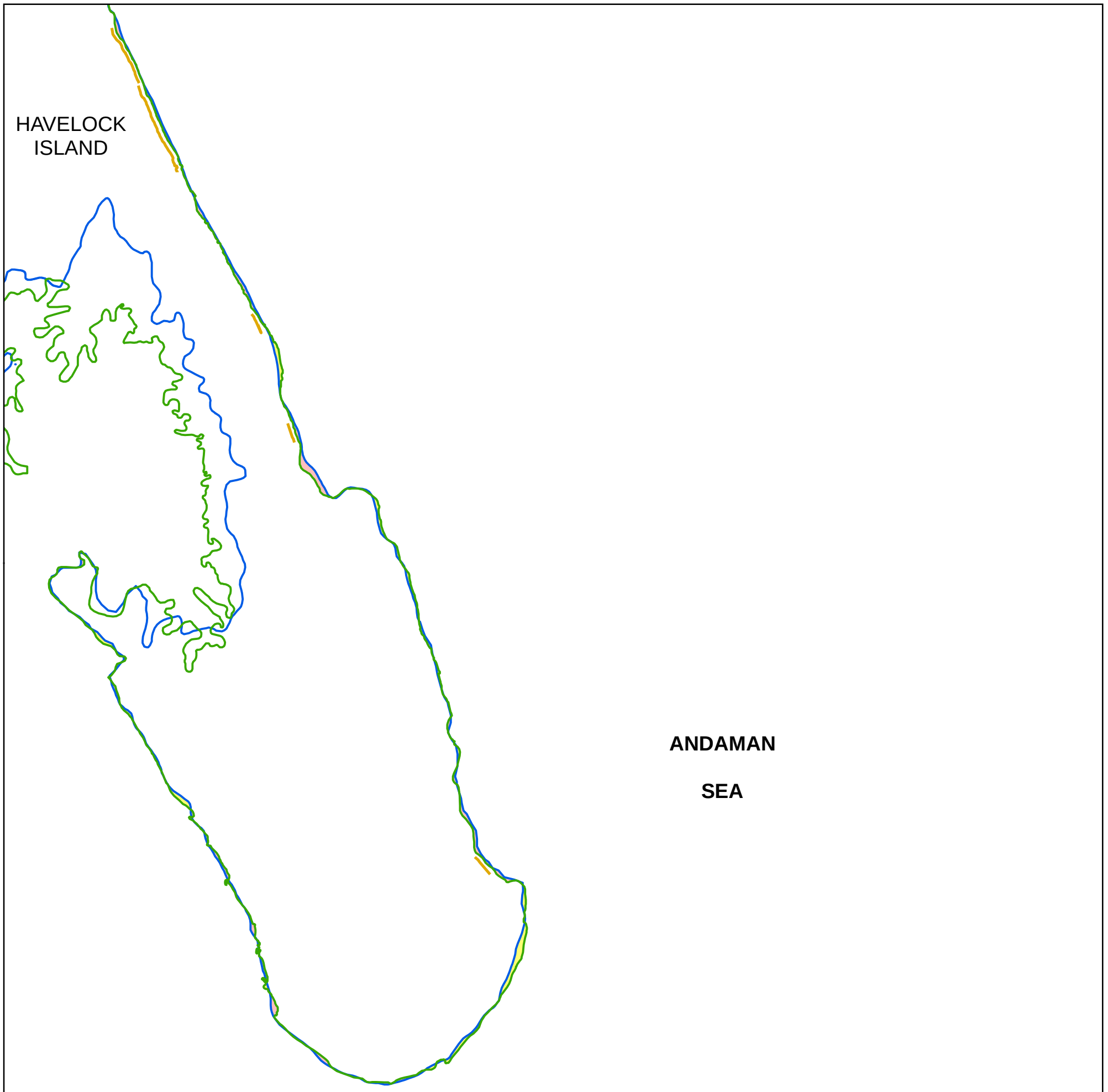
SOUTH ANDAMAN

SHEET NO. 87E01NW



Legend

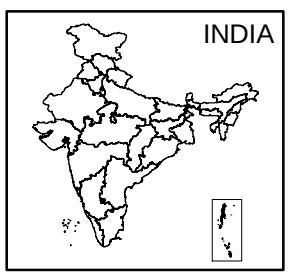
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

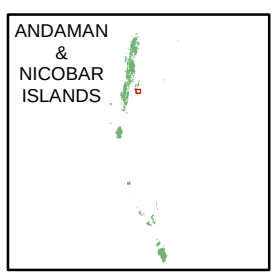
0 2

Scale in Km

INDEX TO SHEETS

86D16 SE	86H04 SW	SEA
87A13 NE		SEA
SEA	87E01 SW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 87A09SW

SOUTH ANDAMAN

CAPE BARUELL

SOUTH ANDAMAN

Legend

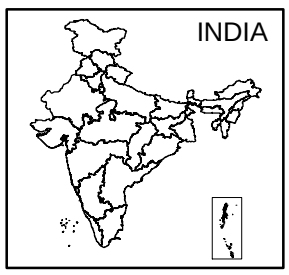
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

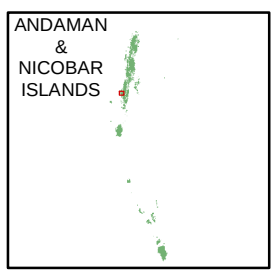
0 2

Scale in Km

INDEX TO SHEETS

SEA	87A09 NW	87A09 NE
SEA		87A09 SE
SEA	87A10 NW	87A10 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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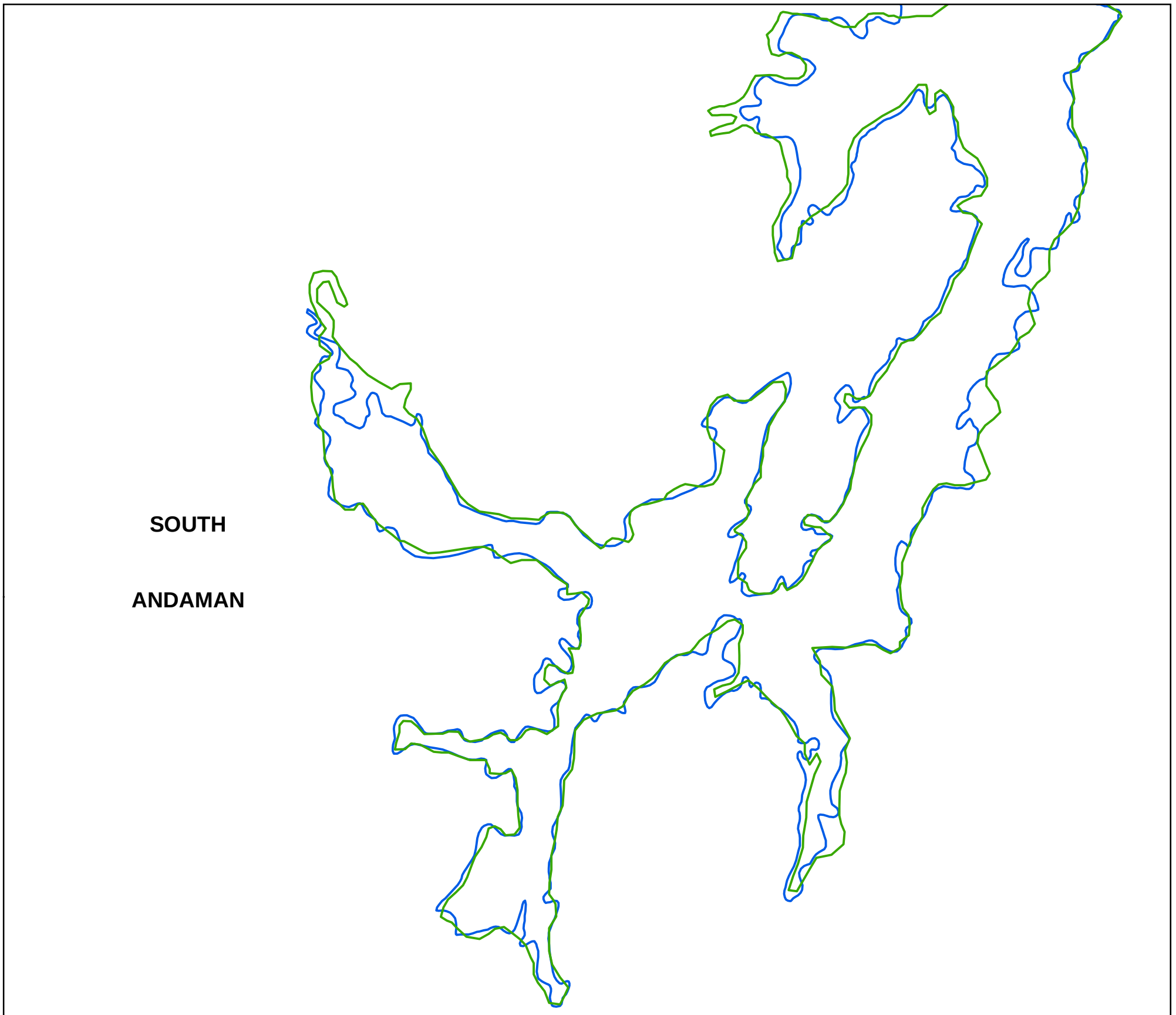
SOUTH ANDAMAN

SHEET NO. 87A09SE



Legend

HIGH-TIDE LINE 2004-06

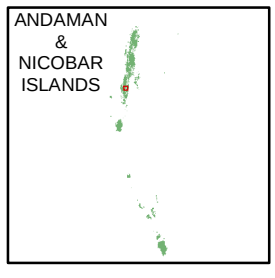
HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

87A09 NW	87A09 NE	87A13 NW
87A09 SW		87A13 SW
87A10 NW	87A10 NE	87A14 NW



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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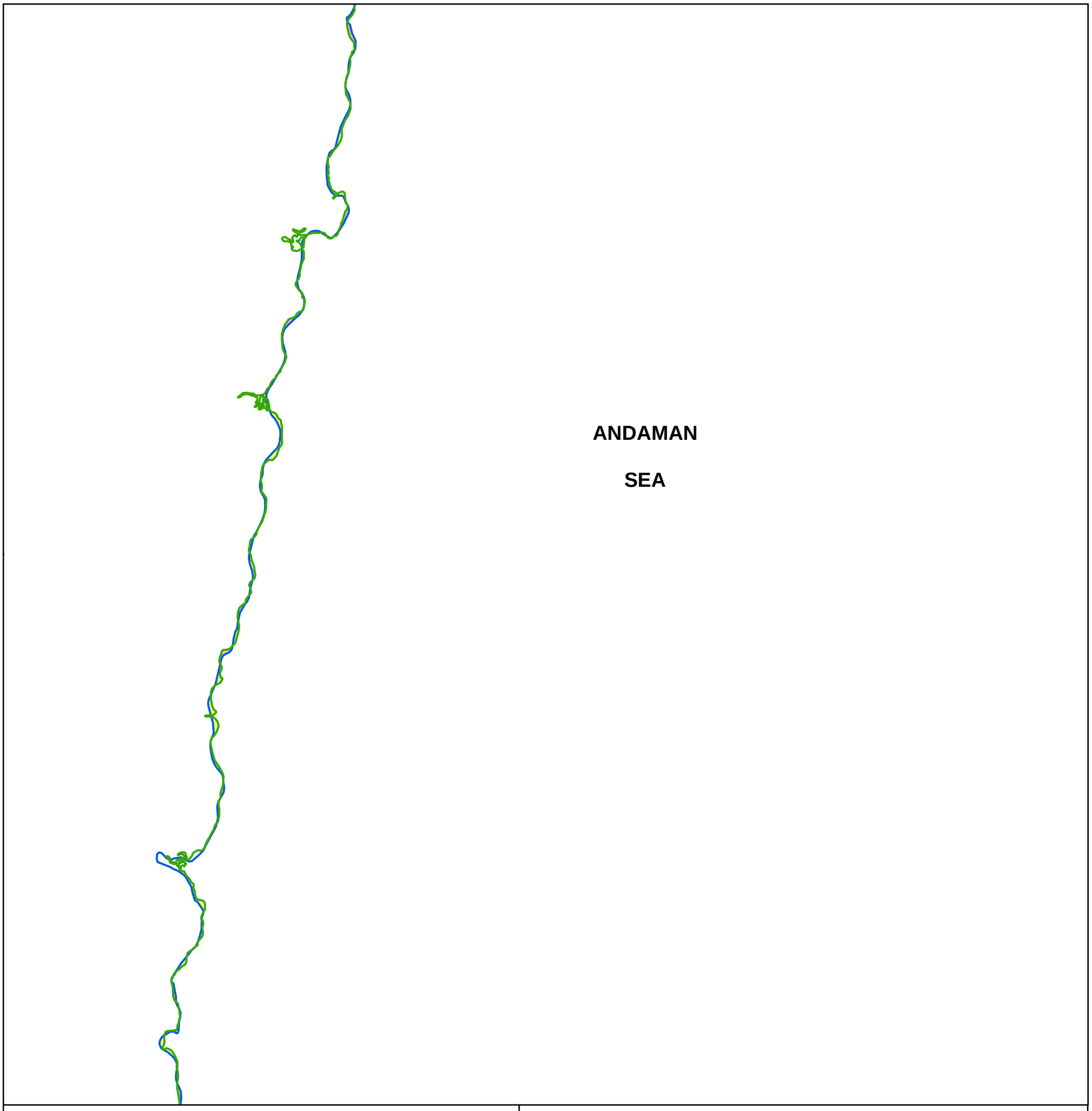
SOUTH ANDAMAN

SHEET NO. 87A13SW



Legend

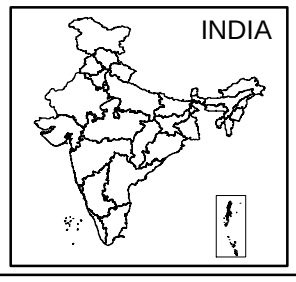
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

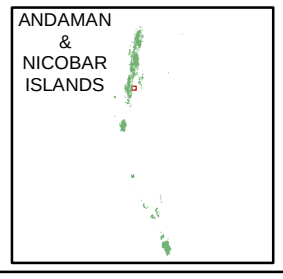
0 2

Scale in Km

INDEX TO SHEETS

87A09 NE	87A13 NW	87A13 NE
87A09 SE		SEA
87A10 NE	87A14 NW	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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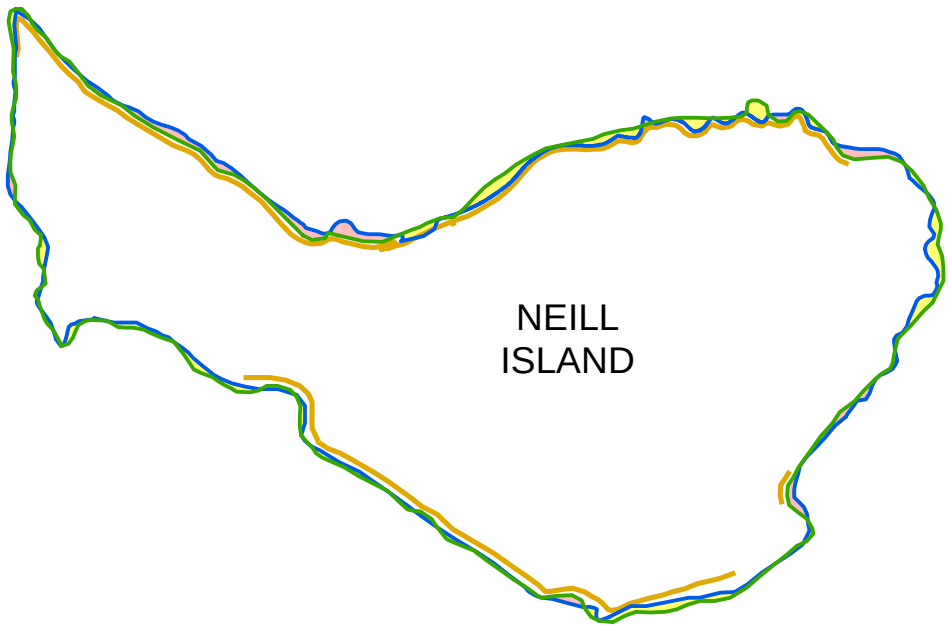
SOUTH ANDAMAN

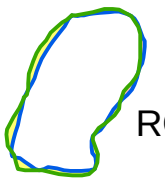
SHEET NO. 87E01SW



ARTHUR CHANNEL

ANDAMAN

SEA



Legend

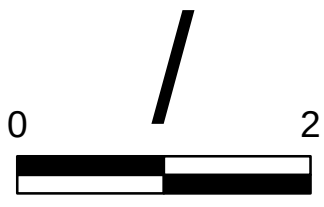
EROSION

ACCRETION

HIGH-TIDE LINE 2004-06

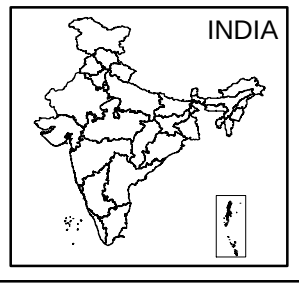
HIGH-TIDE LINE 1989-91

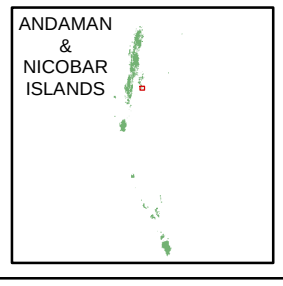
SEA WALL



INDEX TO SHEETS

87A13 NE	87E01 NW	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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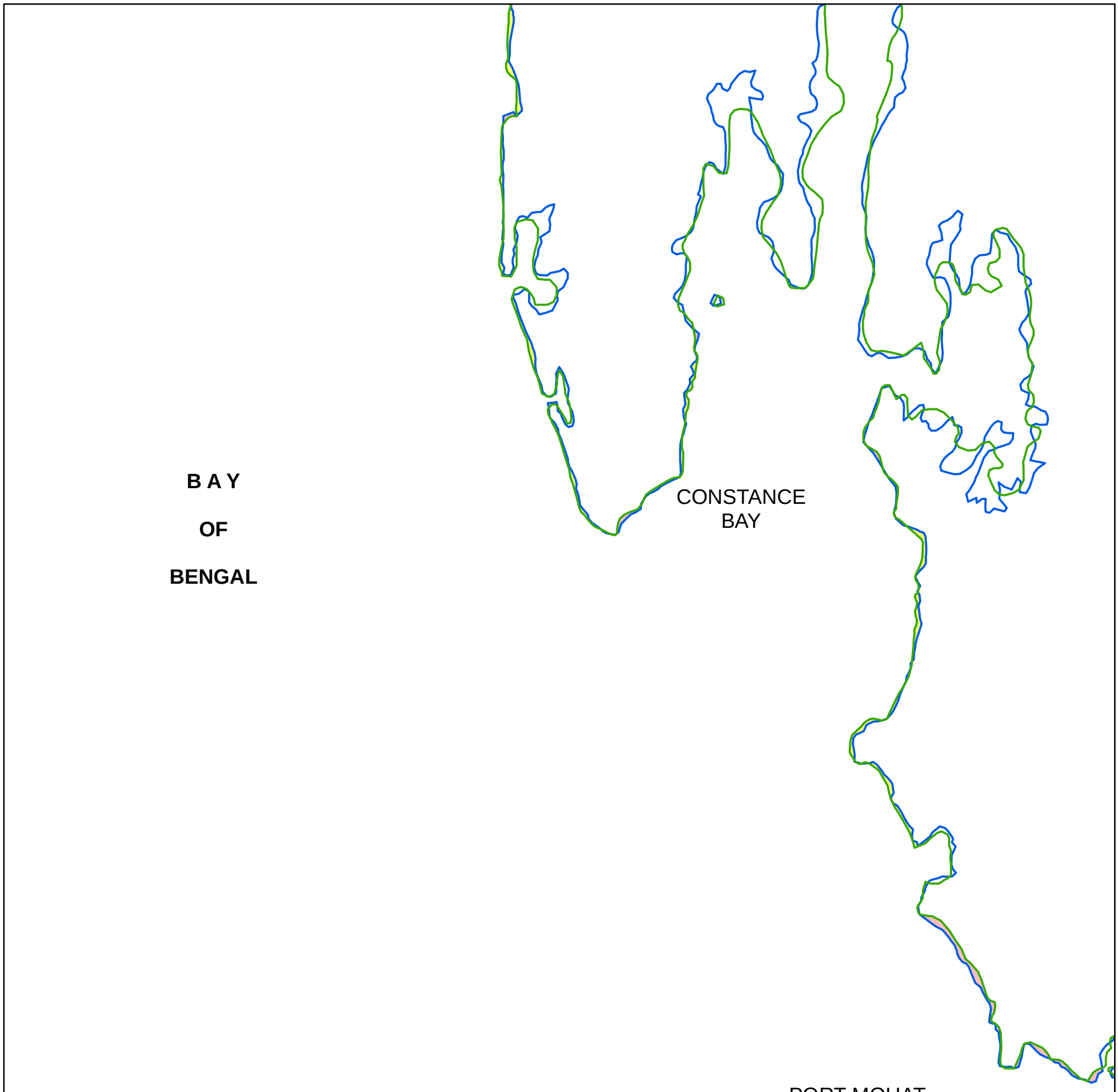
SOUTH ANDAMAN

SHEET NO. 87A10NW



Legend

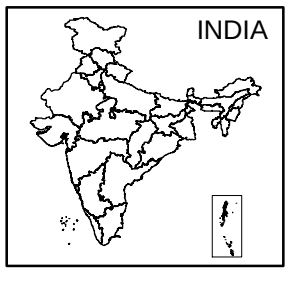
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

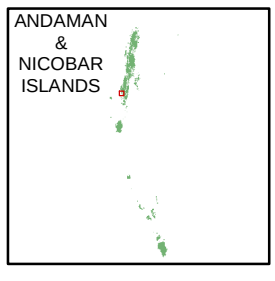
0 2

Scale in Km

INDEX TO SHEETS

SEA	87A09 SW	87A09 SE
SEA		87A10 NE
SEA	87A10 SW	87A10 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

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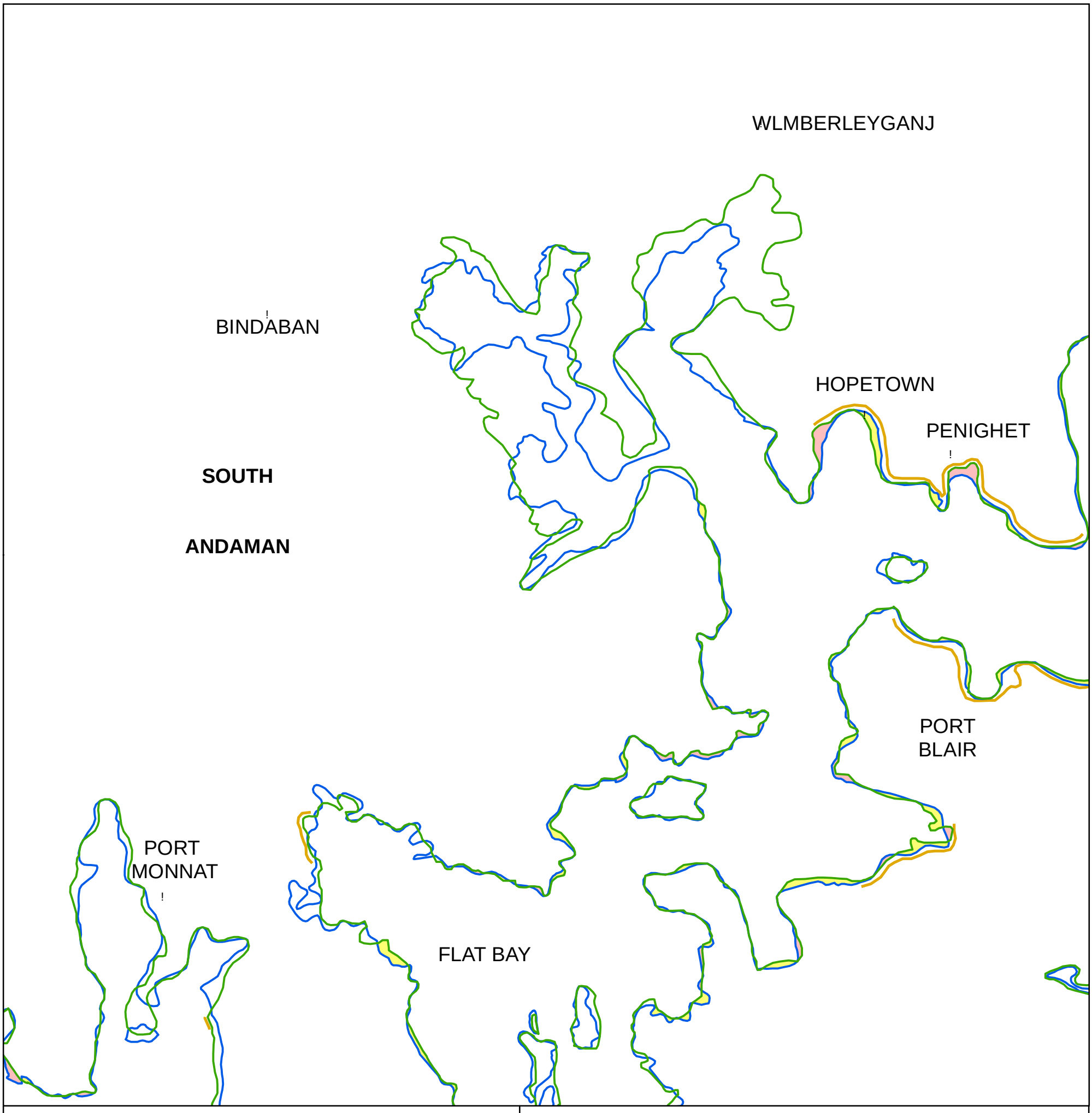
SHEET NO. 87A10NE



Legend

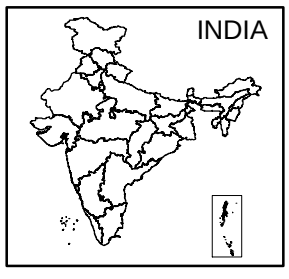
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

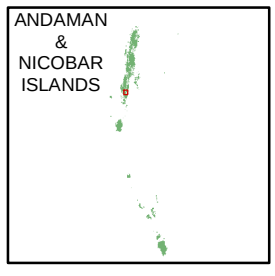
0 2

Scale in Km

INDEX TO SHEETS

87A09 SW	87A09 SE	87A13 SW
87A10 NW		87A14 NW
87A10 SW	87A10 SE	87A14 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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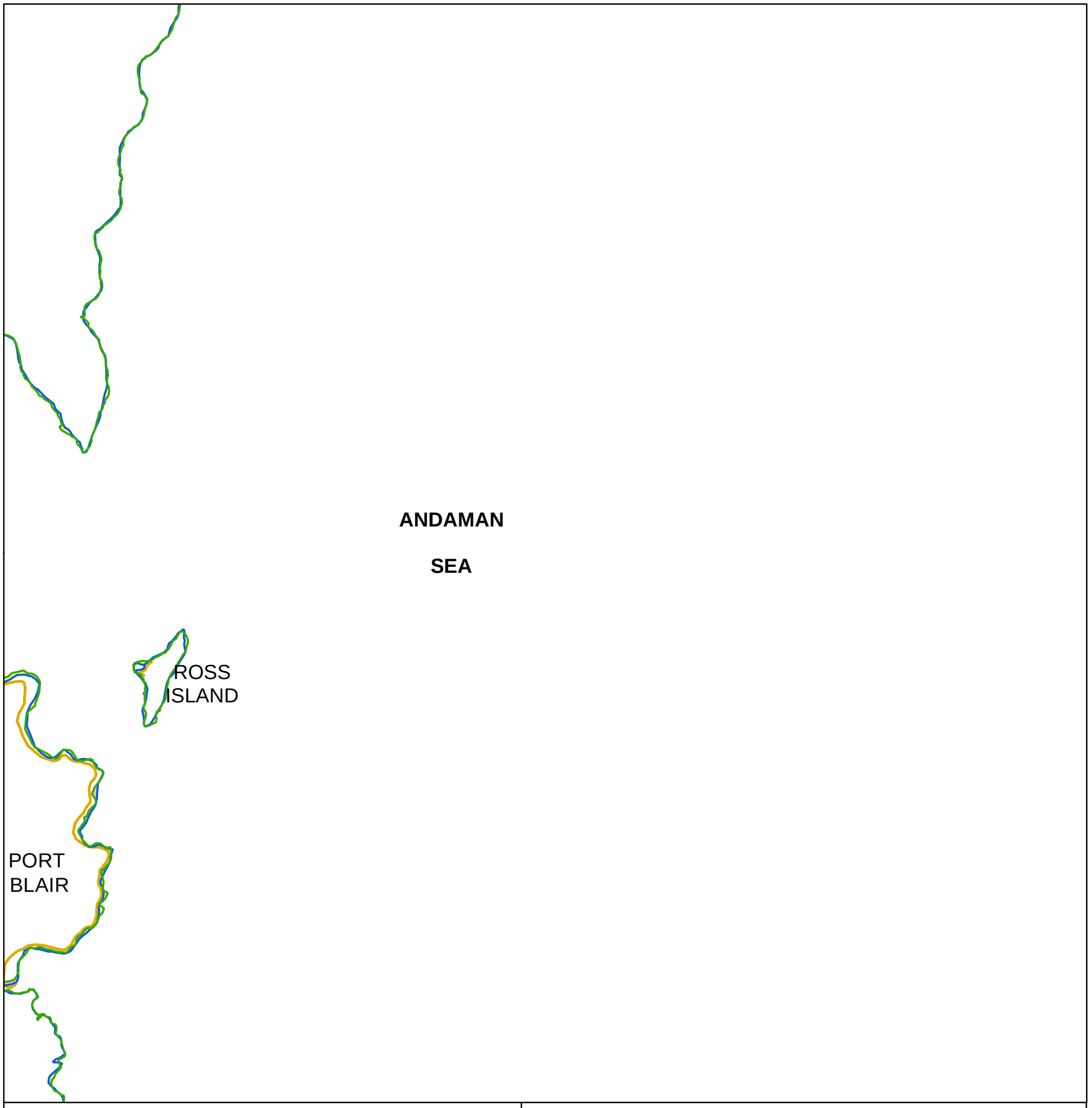
SOUTH ANDAMAN

SHEET NO. 87A14NW



Legend

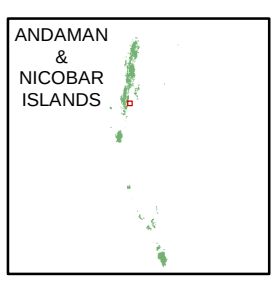
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

0 2

Scale in Km

INDEX TO SHEETS

87A09 SE	87A13 SW	SEA
87A10 NE		SEA
87A10 SE	87A14 SW	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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AND CENTRAL WATER COMMISSION, NEW DELHI

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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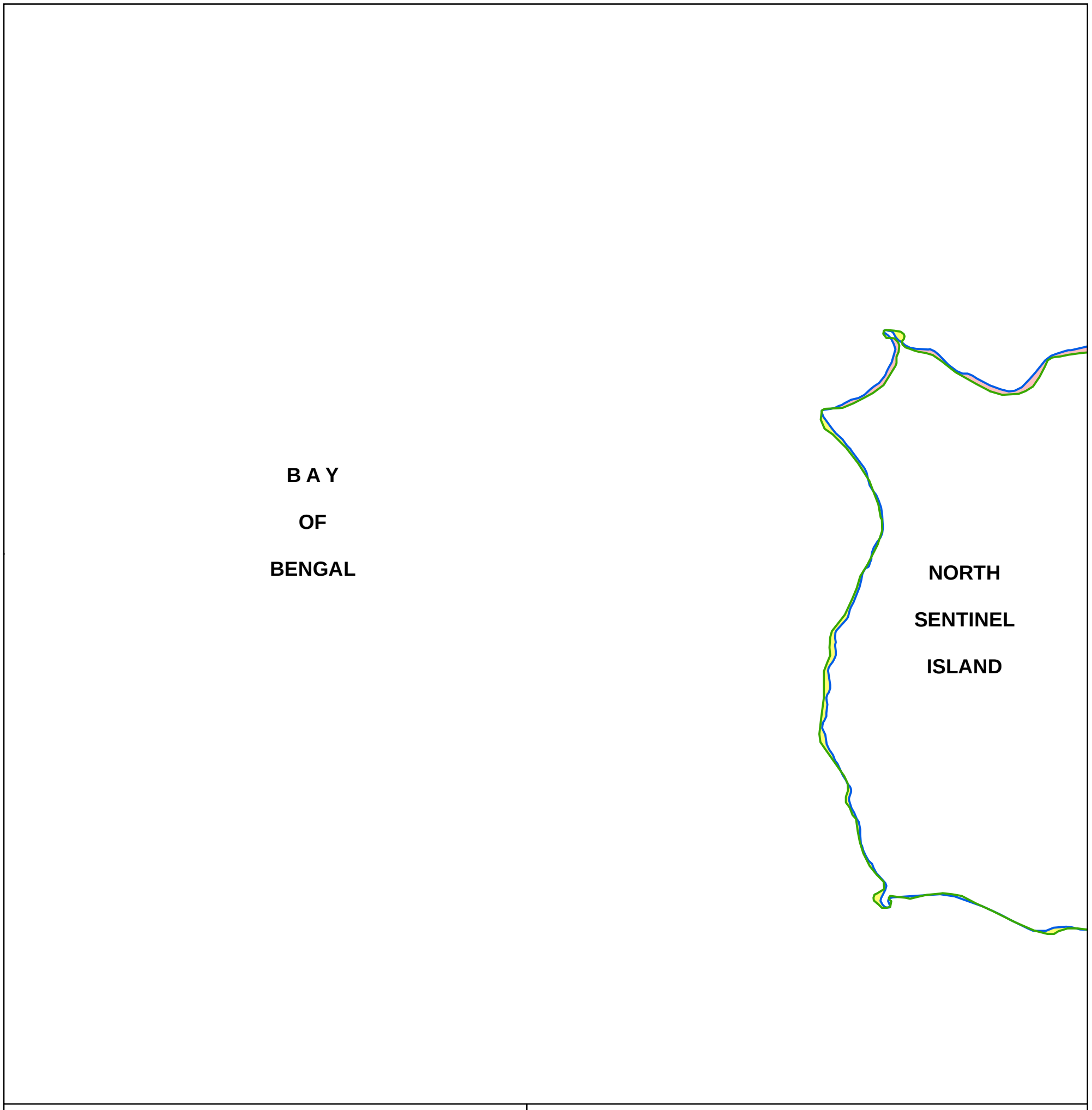
SOUTH ANDAMAN

SHEET NO. 87A02SE



Legend

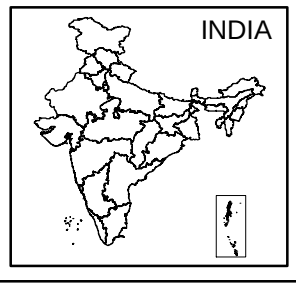
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

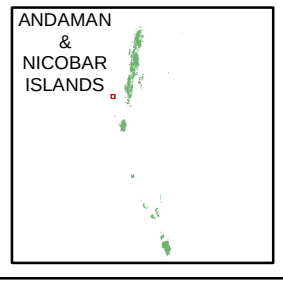
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		87A06 SW
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

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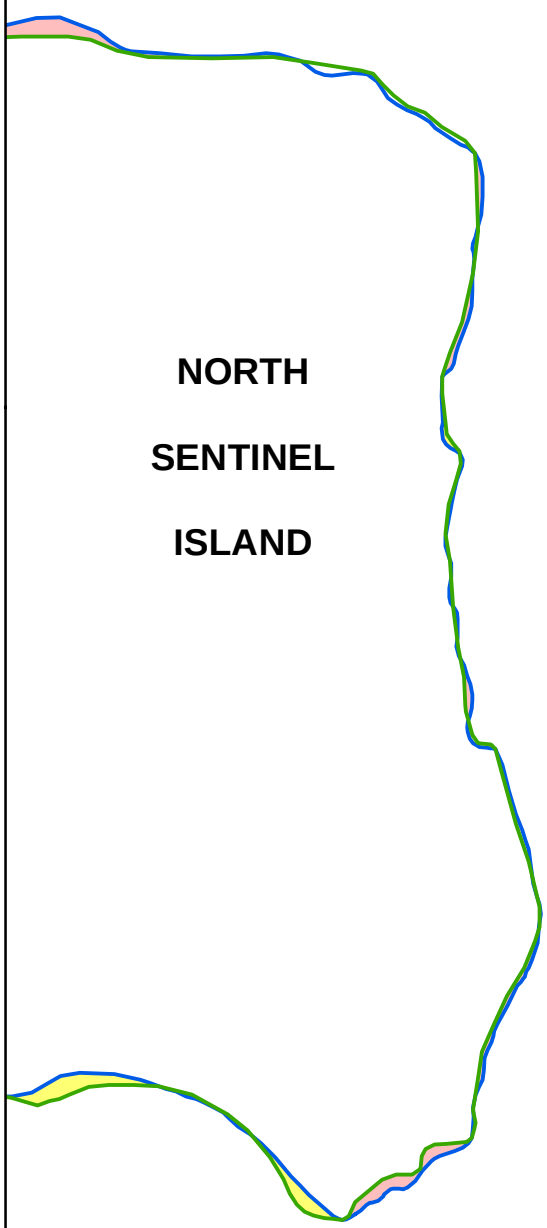
SHEET NO. 87A06SW



B A Y

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BENGAL

Legend

EROSION

ACCRETION

HIGH-TIDE LINE 2004-06

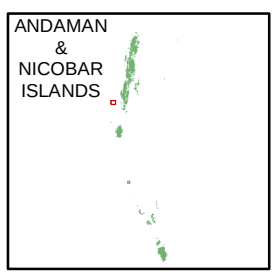
HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
87A02 SE		SEA
SEA	SEA	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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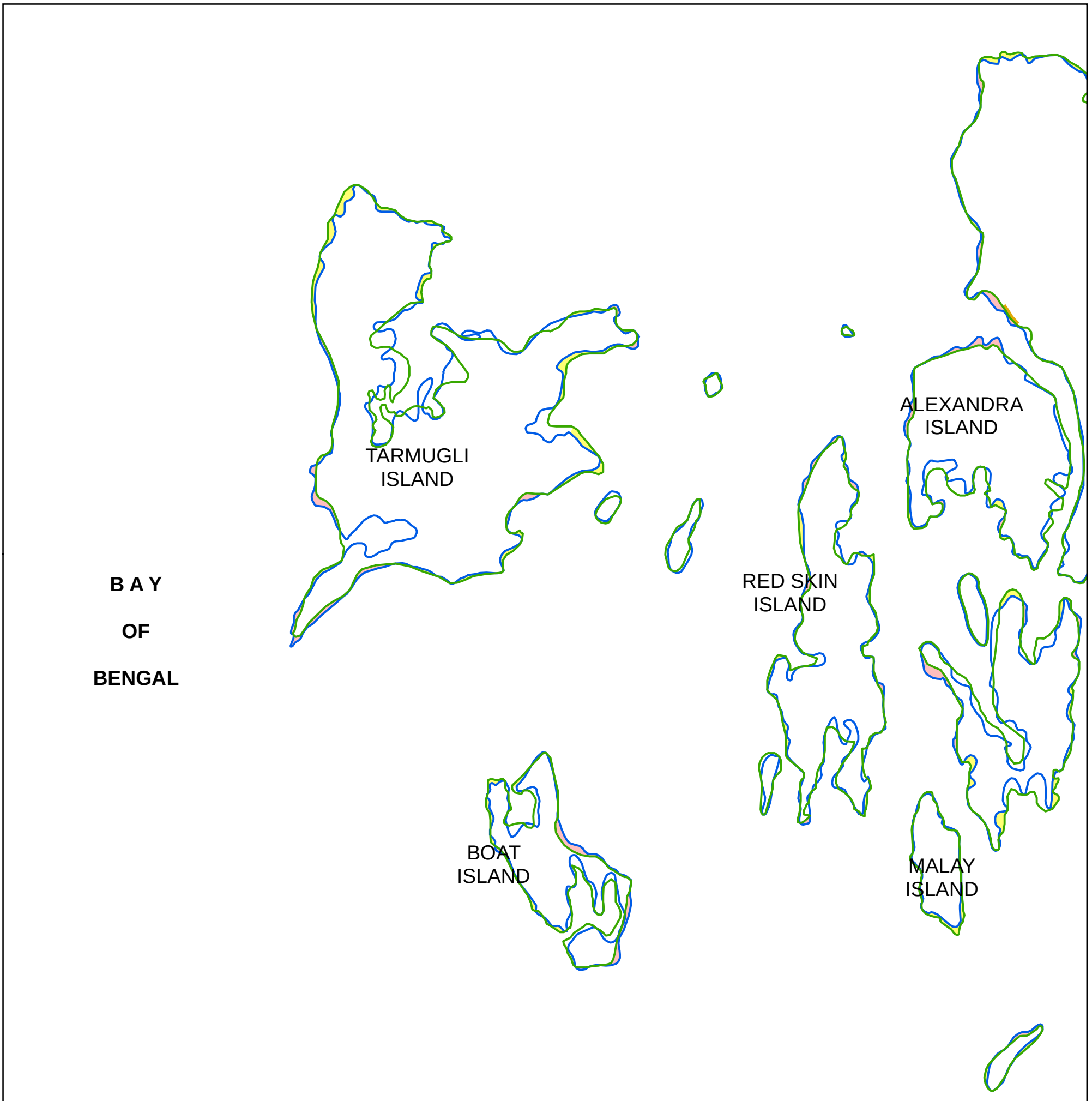
SOUTH ANDAMAN

SHEET NO. 87A10SW



Legend

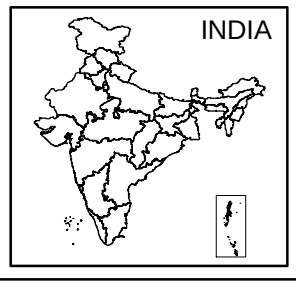
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

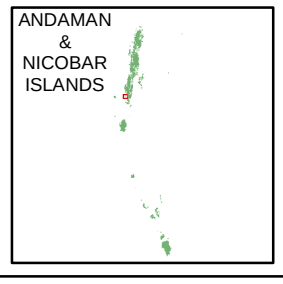
0 2

Scale in Km

INDEX TO SHEETS

SEA	87A10 NW	87A10 NE
SEA		87A10 SE
SEA	87A11 NW	87A11 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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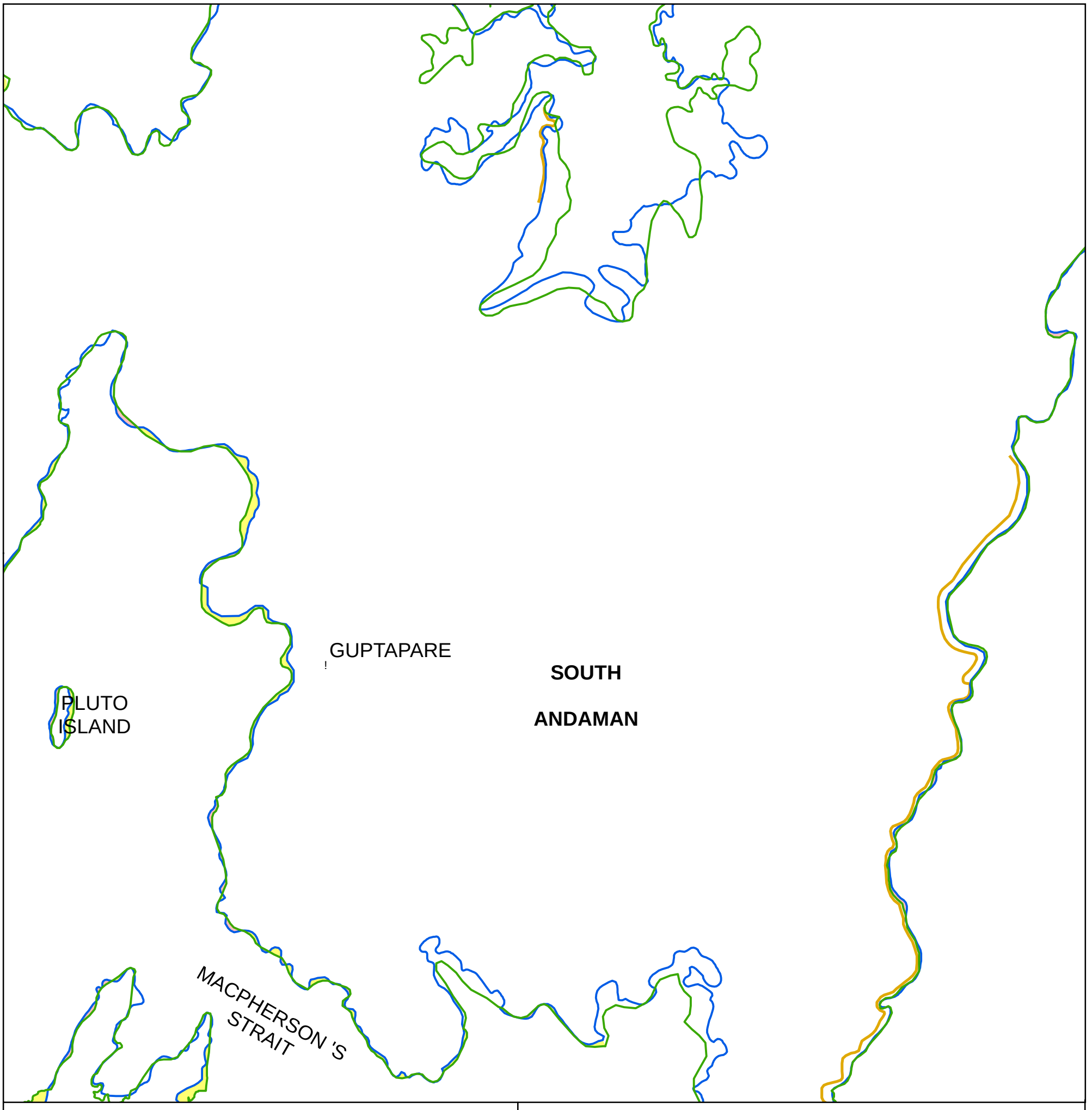
SOUTH ANDAMAN

SHEET NO. 87A10SE



Legend

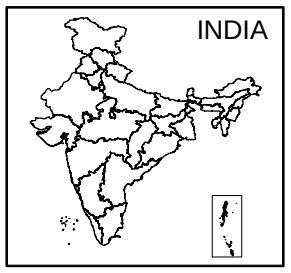
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

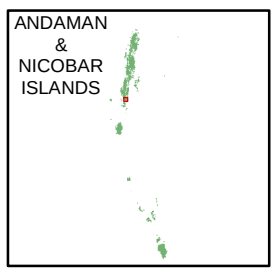
0 2

Scale in Km

INDEX TO SHEETS

87A10 NW	87A10 NE	87A14 NW
87A10 SW		87A14 SW
87A11 NW	87A11 NE	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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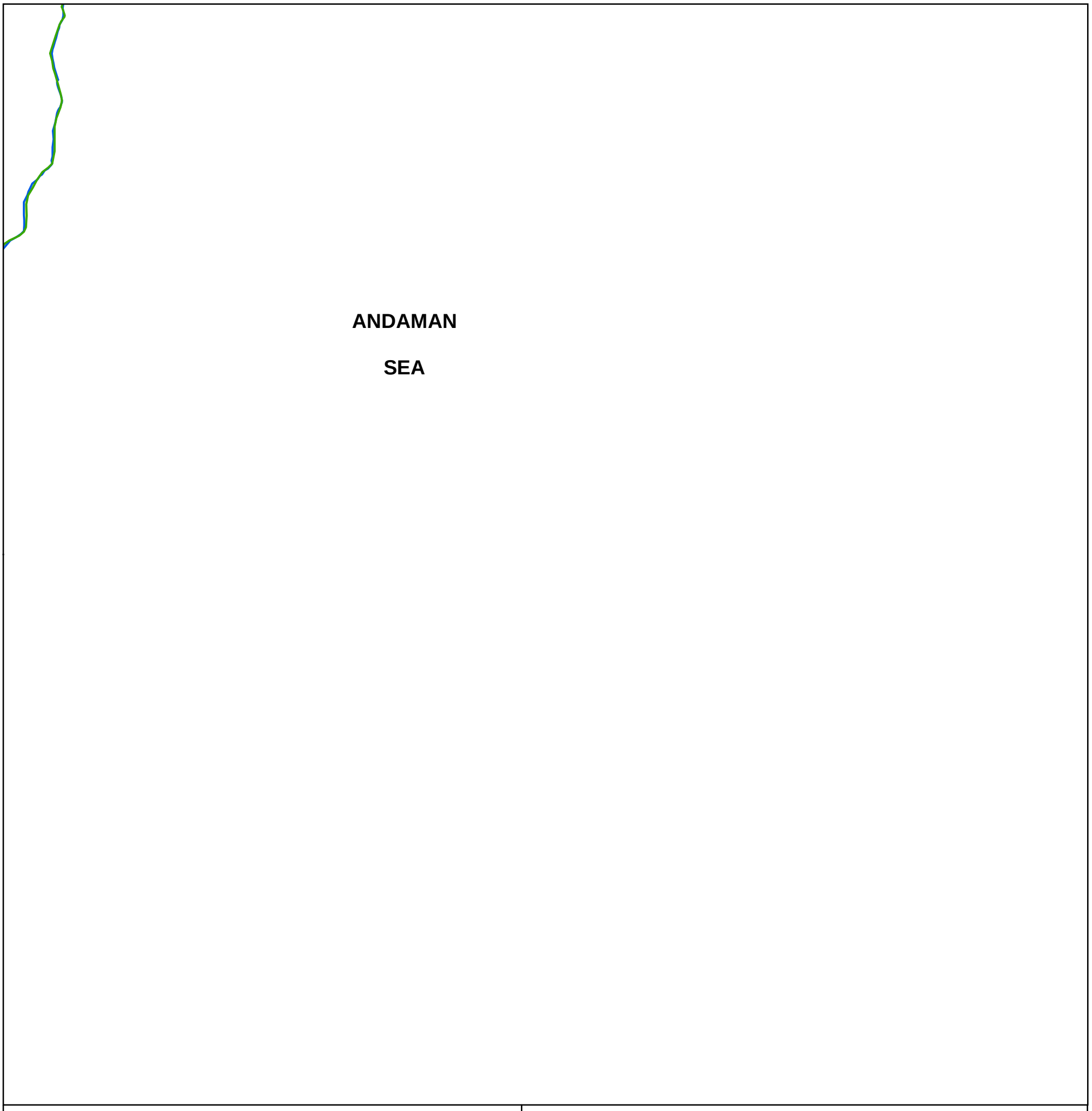
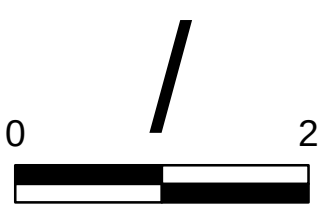
SOUTH ANDAMAN

SHEET NO. 87A14SW



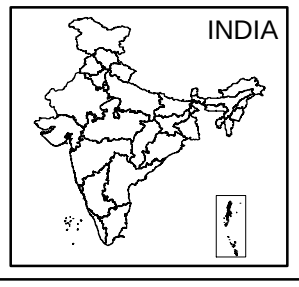
Legend

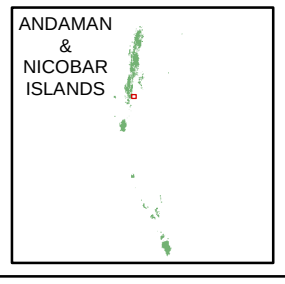
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

87A10 NE	87A14 NW	SEA
87A10 SE		SEA
87A11 NE	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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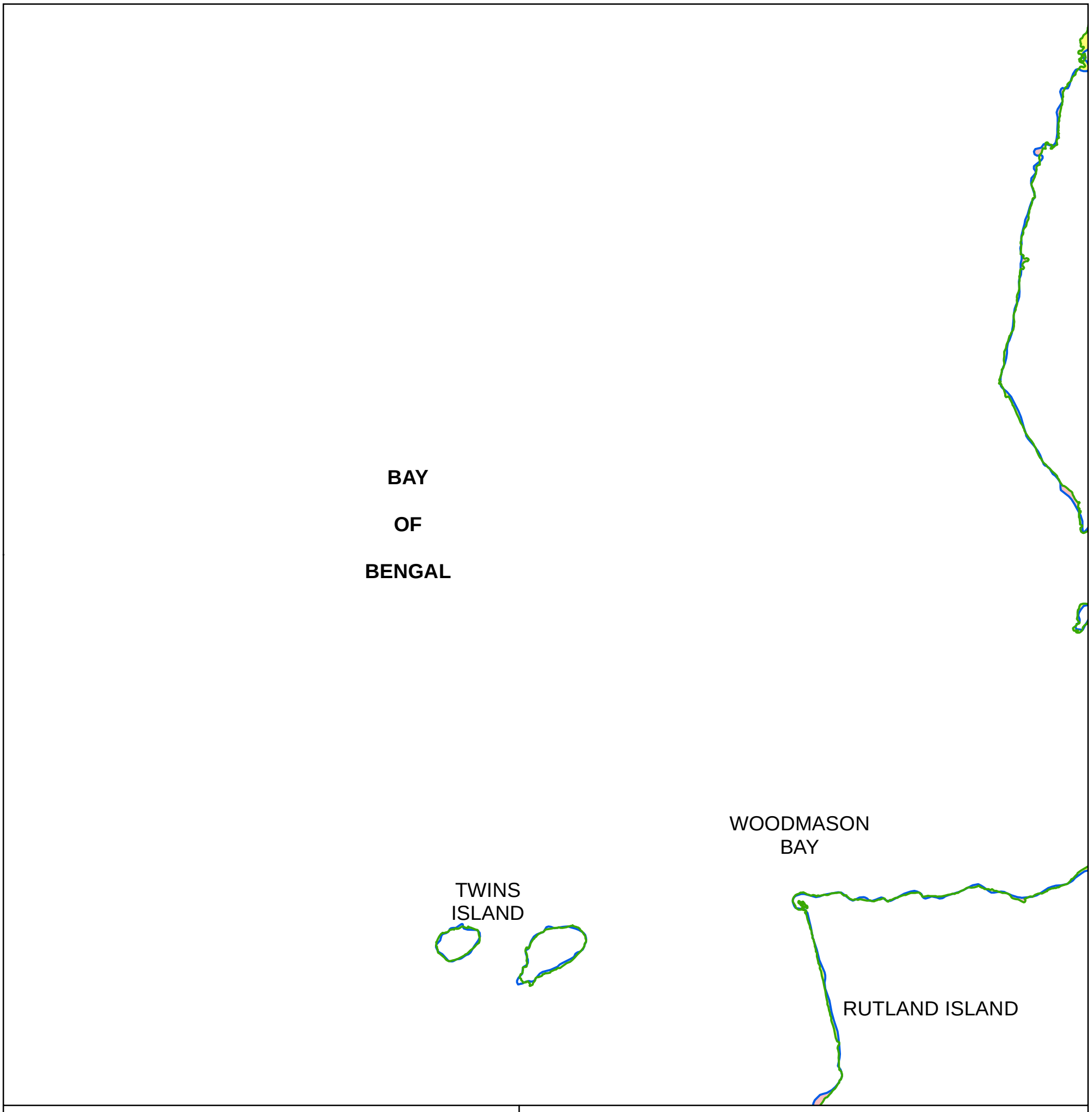
SOUTH ANDAMAN

SHEET NO. 87A11NW



Legend

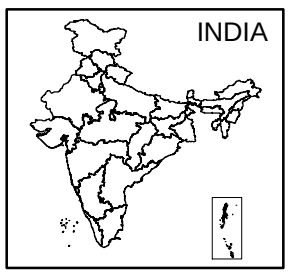
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

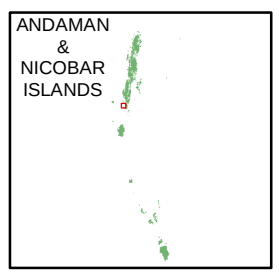
0 2

Scale in Km

INDEX TO SHEETS

SEA	87A10 SW	87A10 SE
SEA		87A11 NE
SEA	87A11 SW	87A11 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

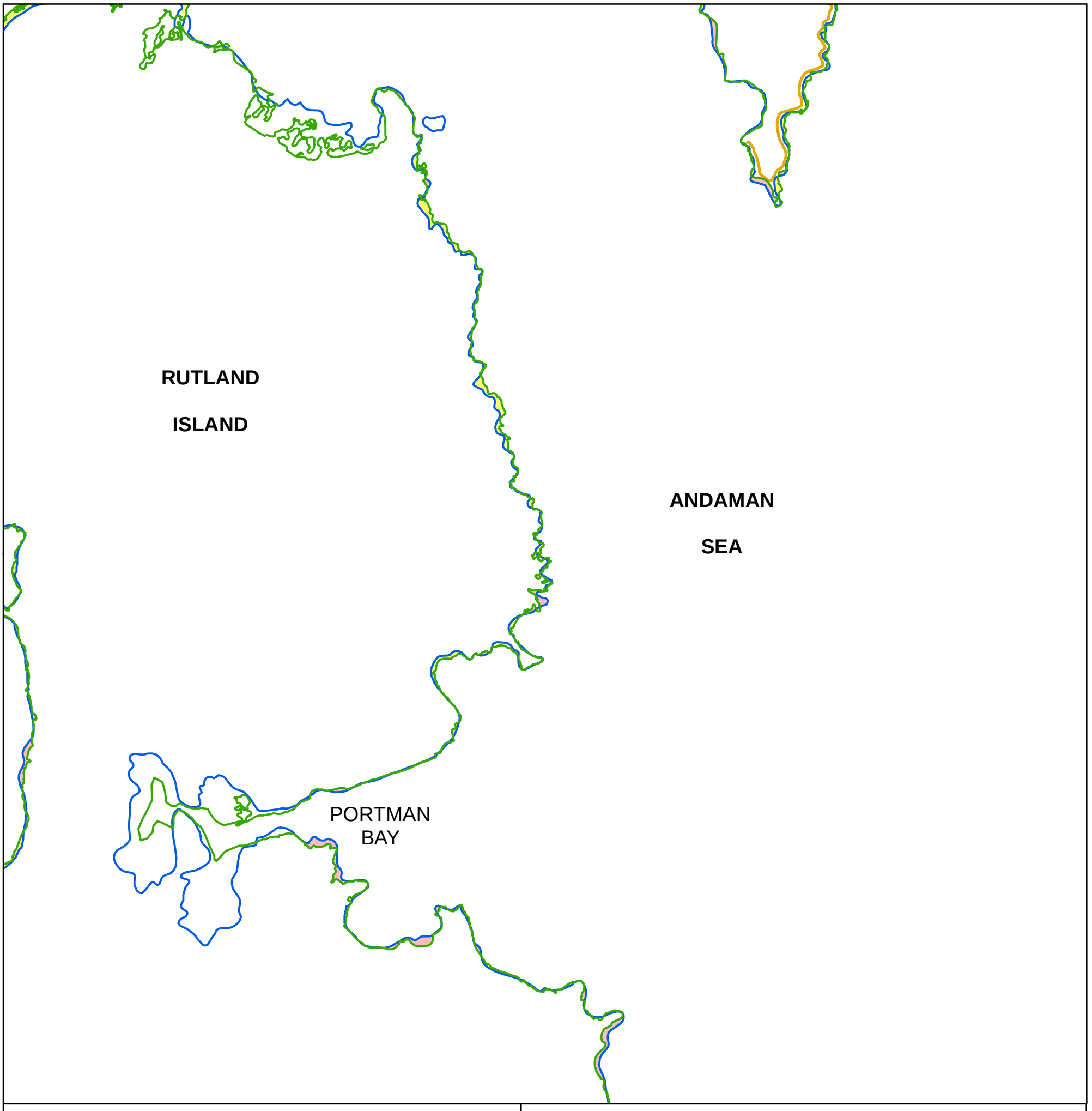
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SOUTH ANDAMAN

SHEET NO. 87A11NE



Legend

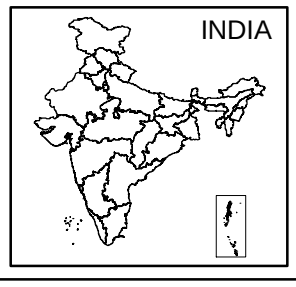
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

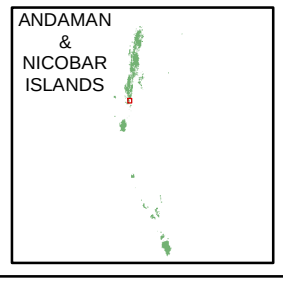
0 2

Scale in Km

INDEX TO SHEETS

87A10 SW	87A10 SE	87A14 SW
87A11 NW		SEA
87A11 SW	87A11 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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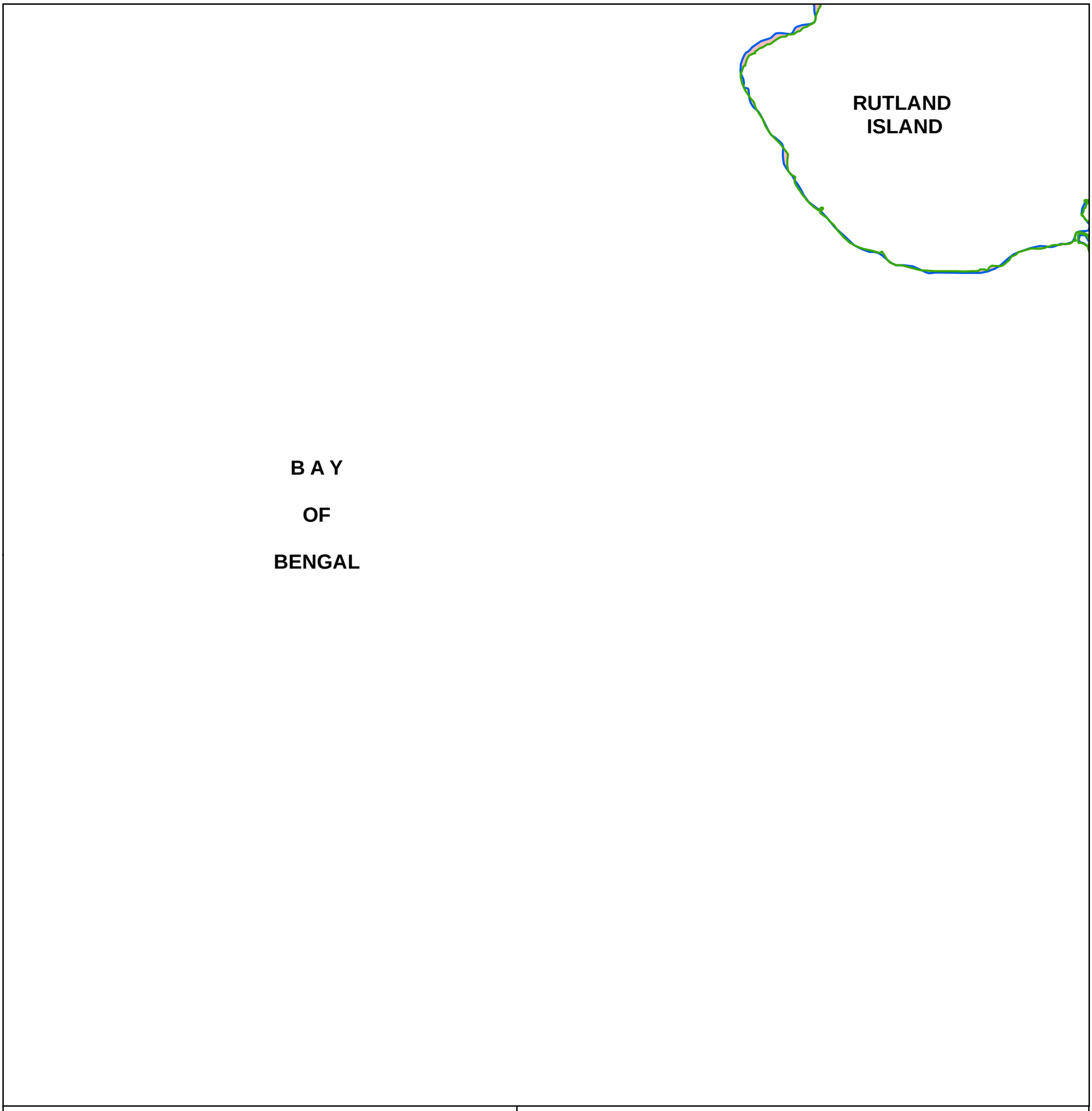
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SOUTH ANDAMAN

SHEET NO. 87A11SW



Legend

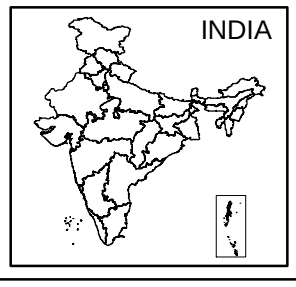
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

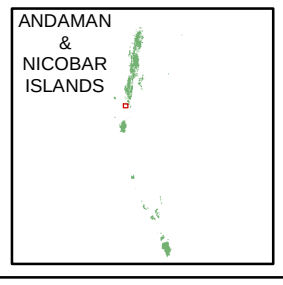
0 2

Scale in Km

INDEX TO SHEETS

SEA	87A11 NW	87A11 NE
SEA		87A11 SE
SEA	SEA	87A12 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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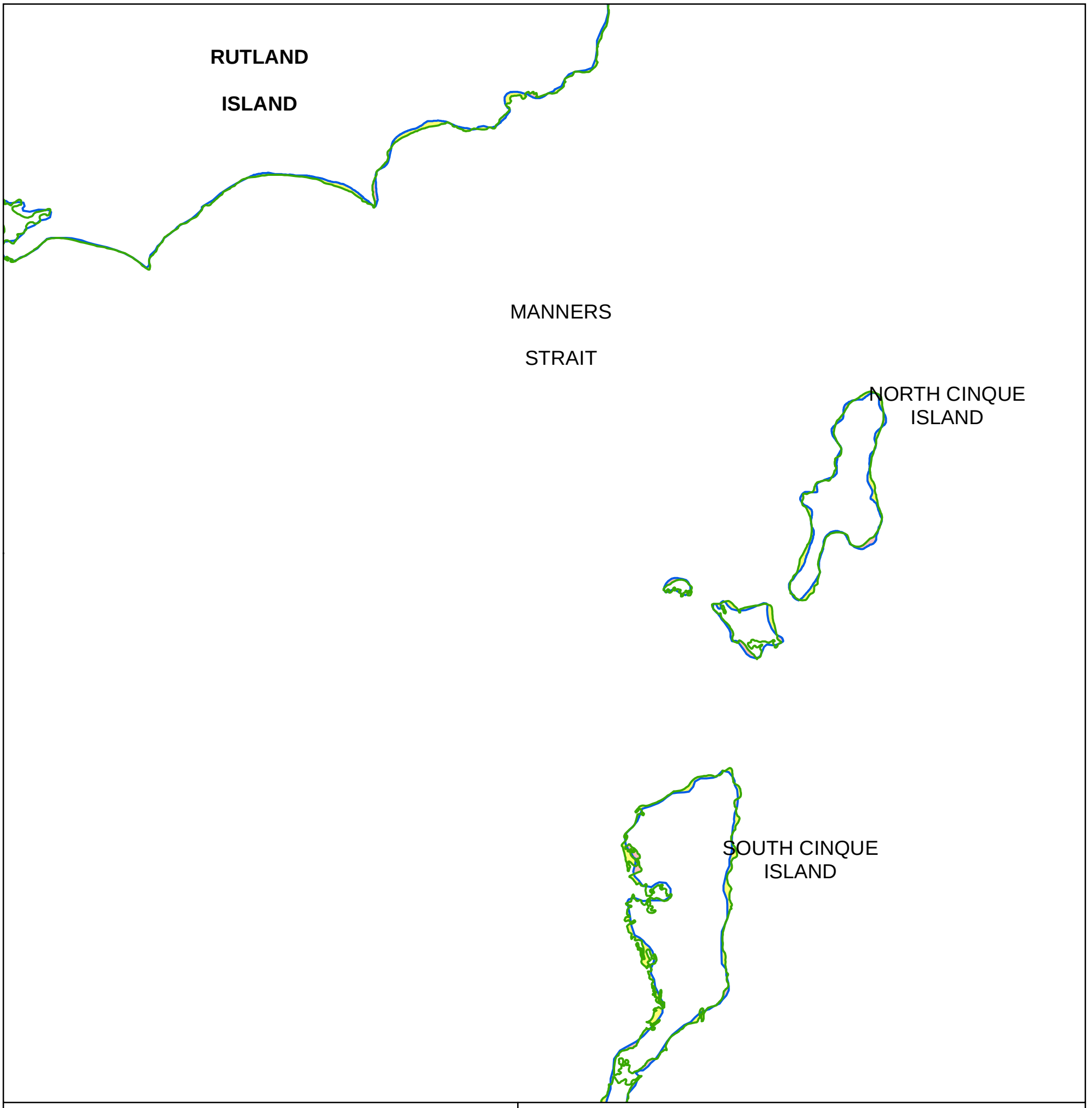
SOUTH ANDAMAN

SHEET NO. 87A11SE



Legend

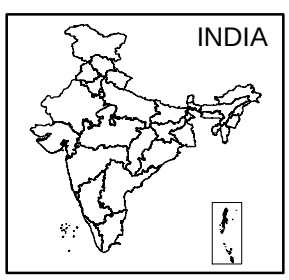
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

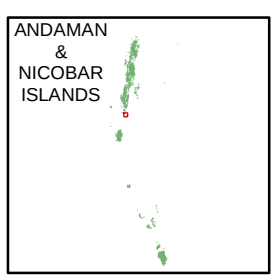
0 2

Scale in Km

INDEX TO SHEETS

87A11 NW	87A11 NE	SEA
87A11 SW		SEA
SEA	87A12 NE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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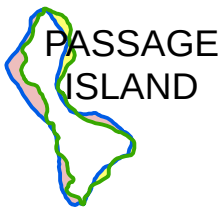
SOUTH ANDAMAN

SHEET NO. 87A12NE

B A Y

OF

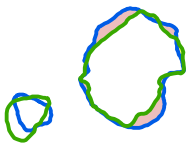
BENGAL



ANDAMAN

SEA

THE SISTERS



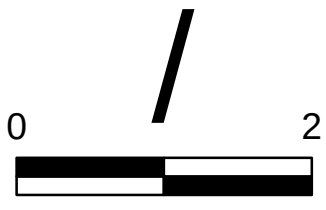
Legend

EROSION

ACCRETION

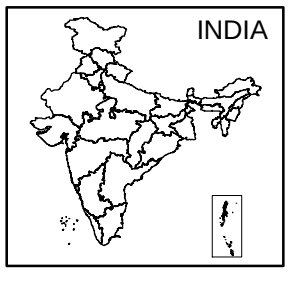
HIGH-TIDE LINE 2004-06

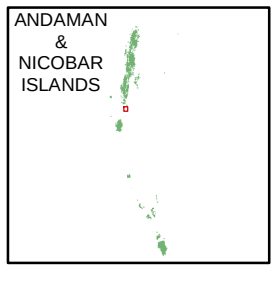
HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

87A11 SW	87A11 SE	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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AND CENTRAL WATER COMMISSION, NEW DELHI

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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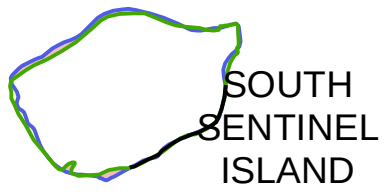
SOUTH ANDAMAN

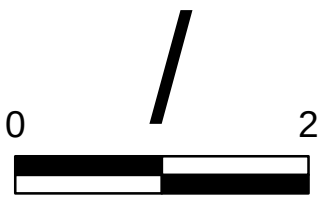
SHEET NO. 87B01NE



B A Y OF BENGAL

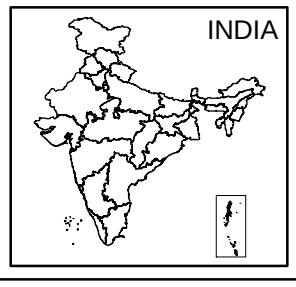
Legend

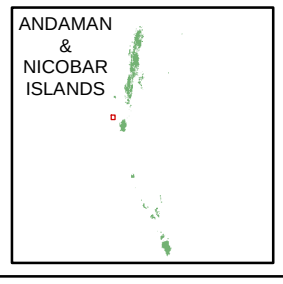
- EROSION
- ACCRETION
- STABLE
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SOUTH ANDAMAN

SHEET NO. 87B05NE

DUNCAN
PASSAGE

Legend

HIGH-TIDE LINE 2004-06

HIGH-TIDE LINE 1989-91

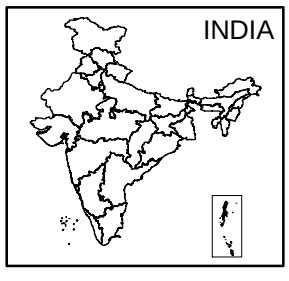
STABLE

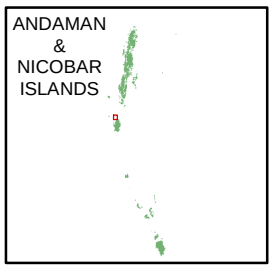
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		87B09 NW
SEA	87B05 SE	87B09 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

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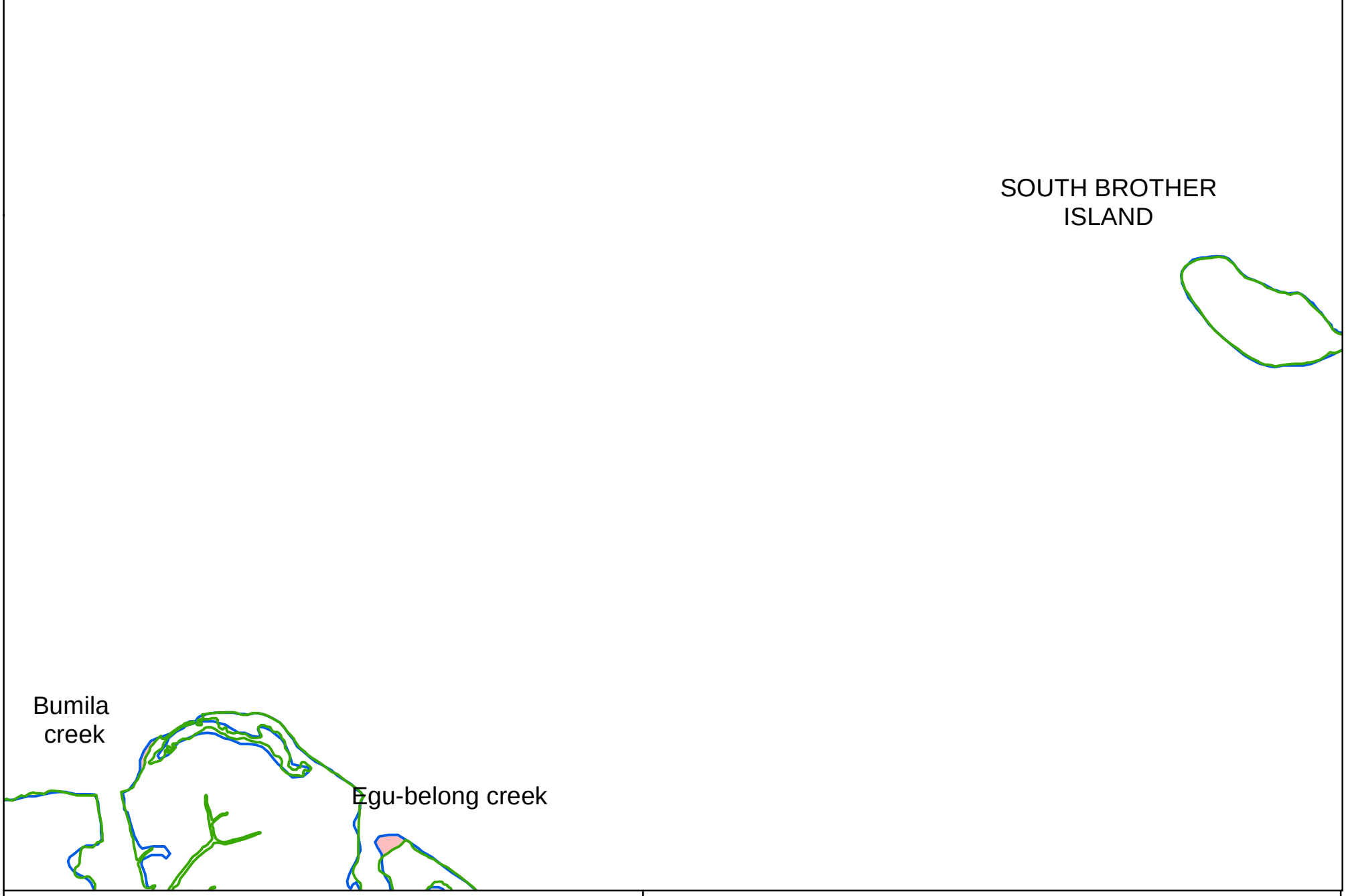
SHEET NO. 87B09NW



Legend

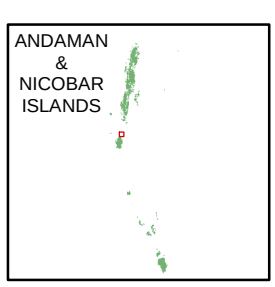
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
87B05 NE		87B09 NE
87B05 SE	87B09 SW	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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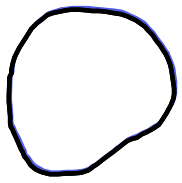
SOUTH ANDAMAN

SHEET NO. 87B09NE



NORTH BROTHER ISLAND

ANDAMAN

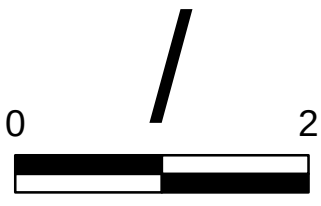
SEA

Legend

HIGH-TIDE LINE 2004-06

HIGH-TIDE LINE 1989-91

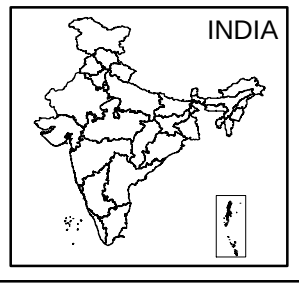
STABLE

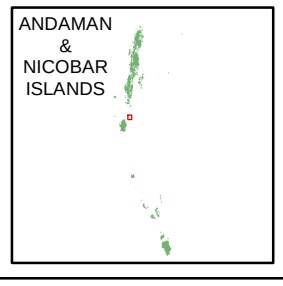


Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
87B09 NW		SEA
87B09 SW	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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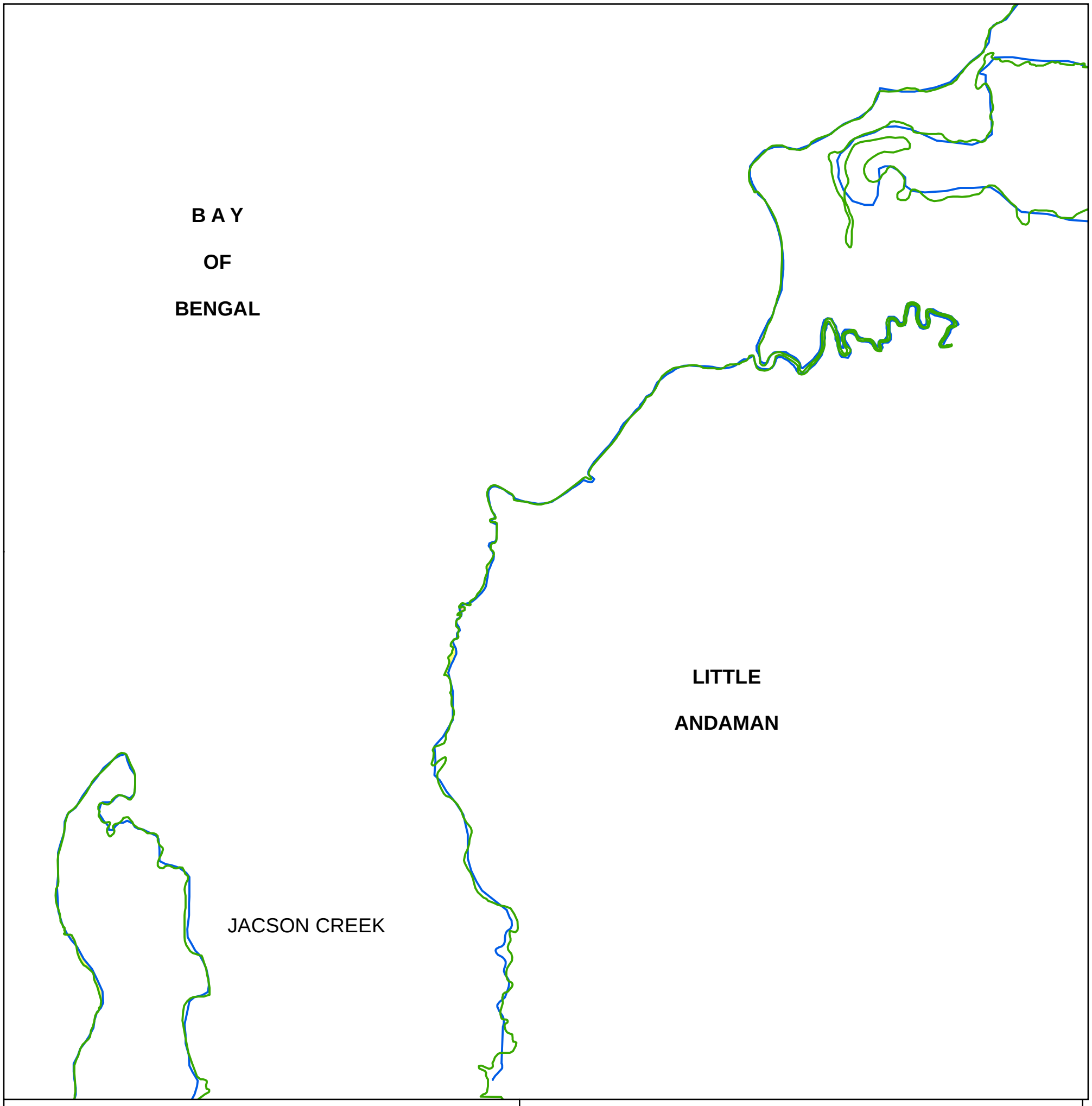
SOUTH ANDAMAN

SHEET NO. 87B05SE



Legend

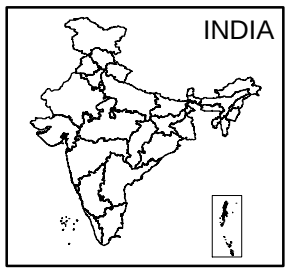
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

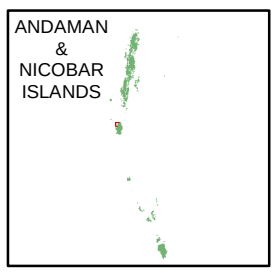
0 2

Scale in Km

INDEX TO SHEETS

SEA	87B05 NE	87B09 NW
SEA		87B09 SW
SEA	87B06 NE	87B10 NW





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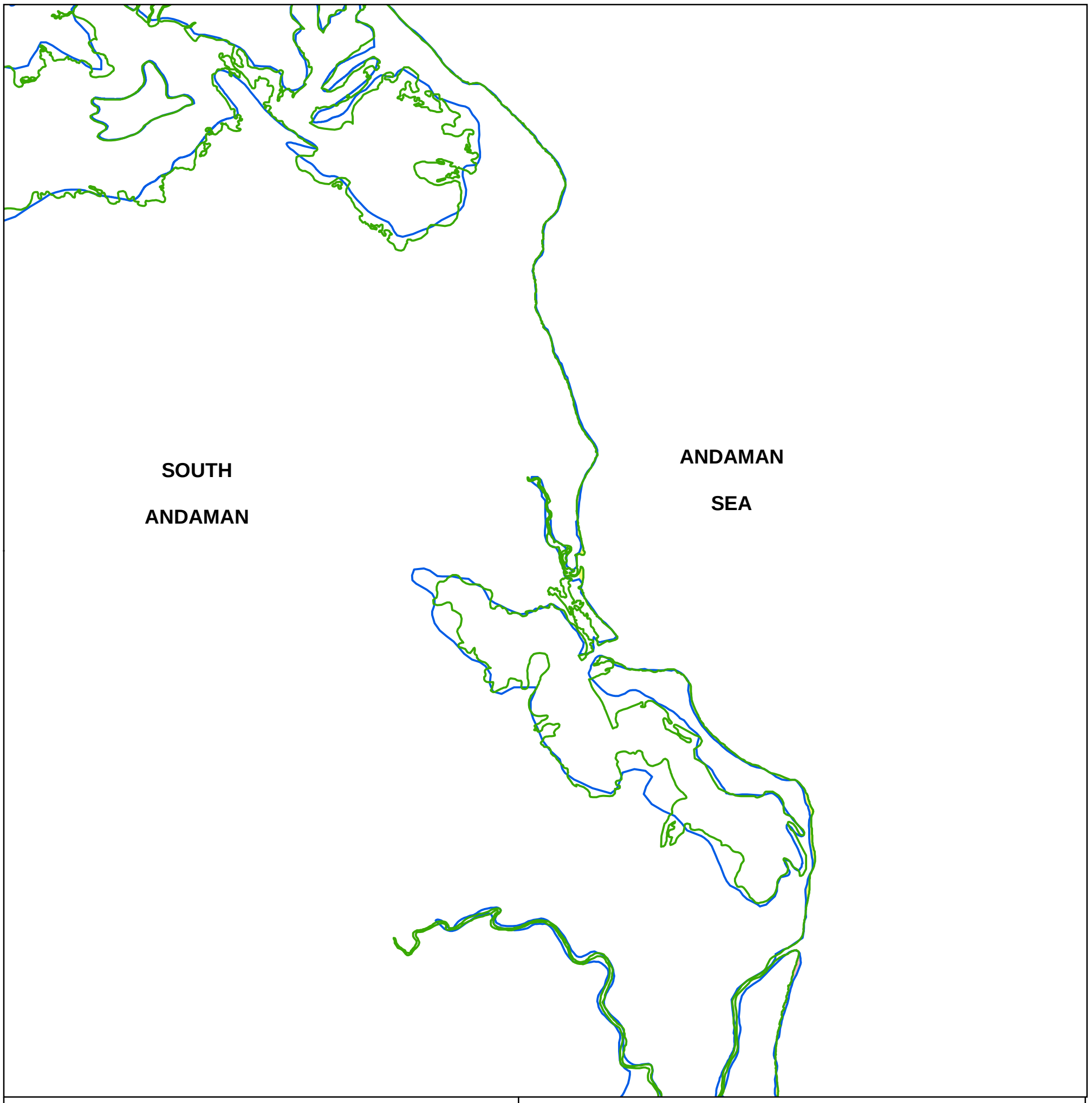
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

FOR OFFICIAL USE ONLY
SHEET NO. 87B09SW



Legend

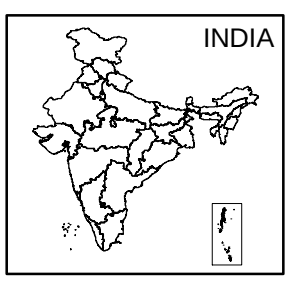
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

87B05 NE	87B09 NW	87B09 NE
87B05 SE		SEA
87B06 NE	87B10 NW	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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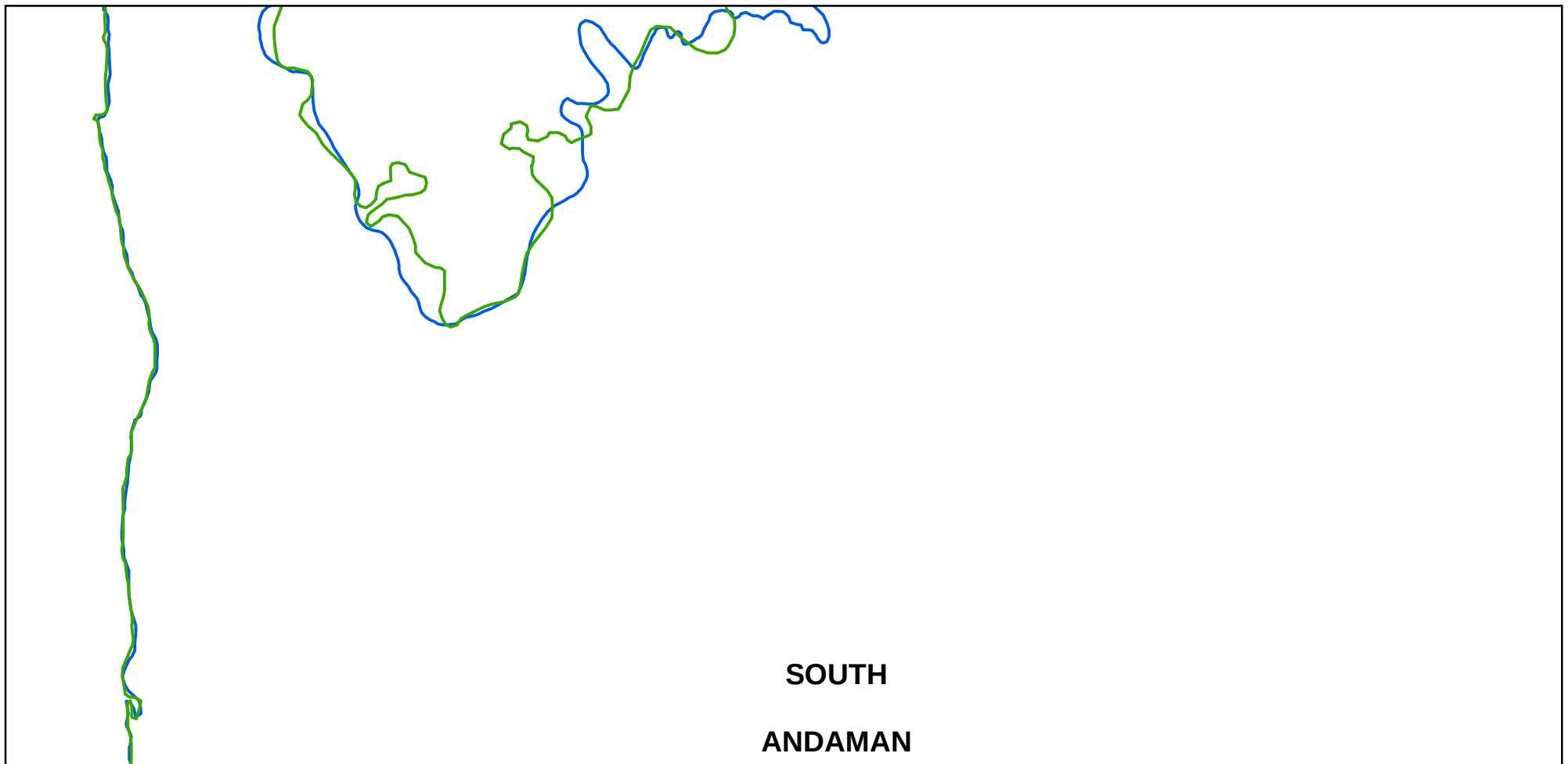
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

FOR OFFICIAL USE ONLY

SHEET NO. 87B06NE



Legend

EROSION

ACCRETION

HIGH-TIDE LINE 2004-06

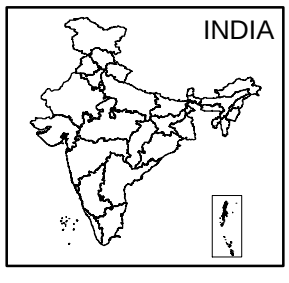
HIGH-TIDE LINE 1989-91

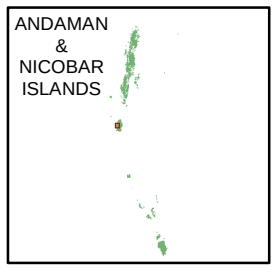
0 2

Scale in Km

INDEX TO SHEETS

SEA	87B05 SE	87B09 SW
SEA		87B10 NW
SEA	87B06 SE	87B10 SW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

SOUTH ANDAMAN

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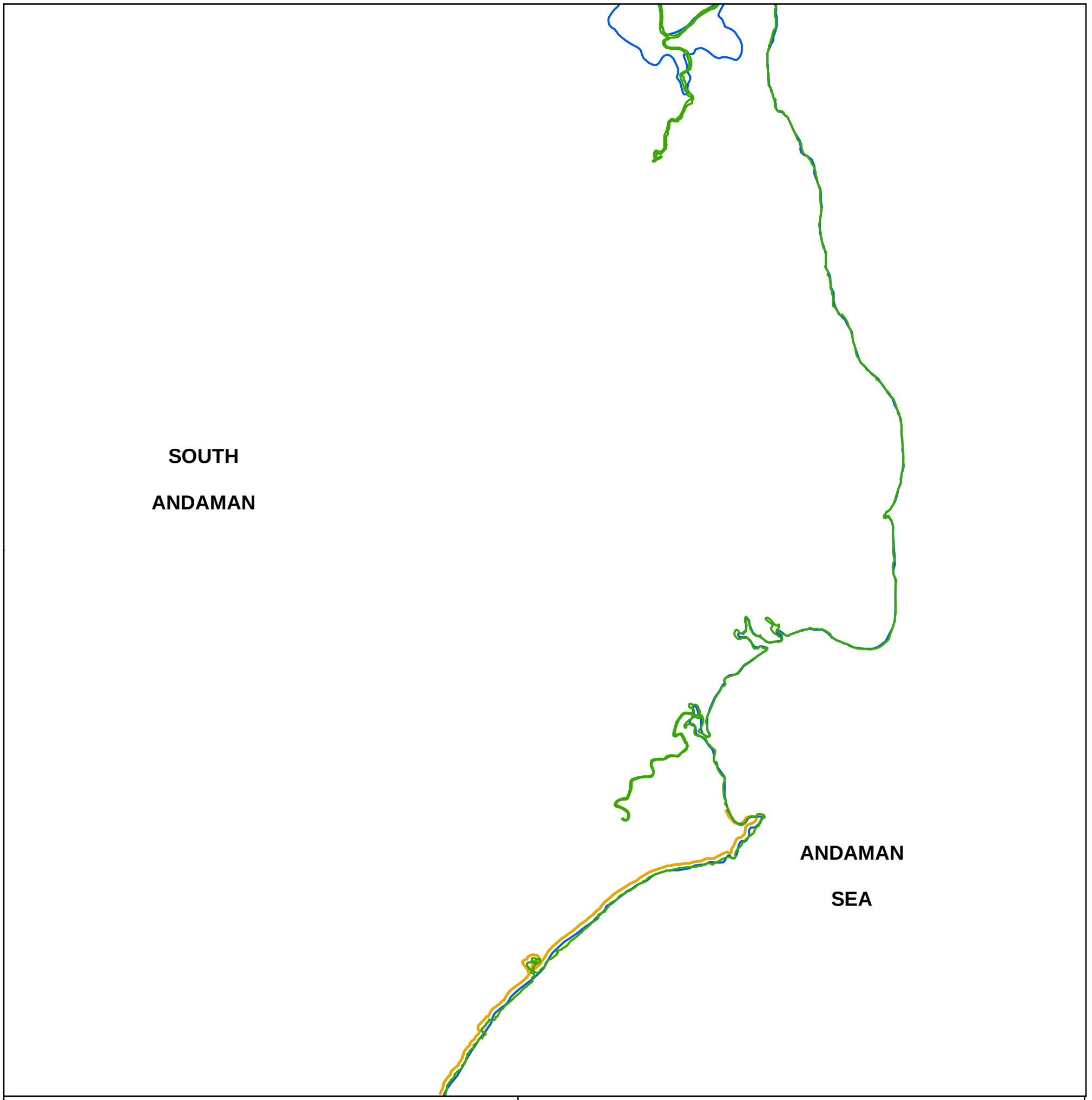
SHEET NO. 87B10NW



Legend

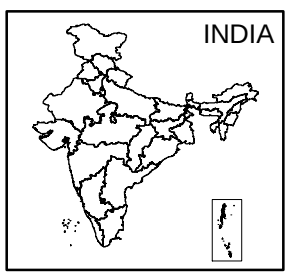
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

0 2

Scale in Km

INDEX TO SHEETS

87B05 SE	87B09 SW	SEA
87B06 NE		SEA
87B06 SE	87B10 SW	SEA



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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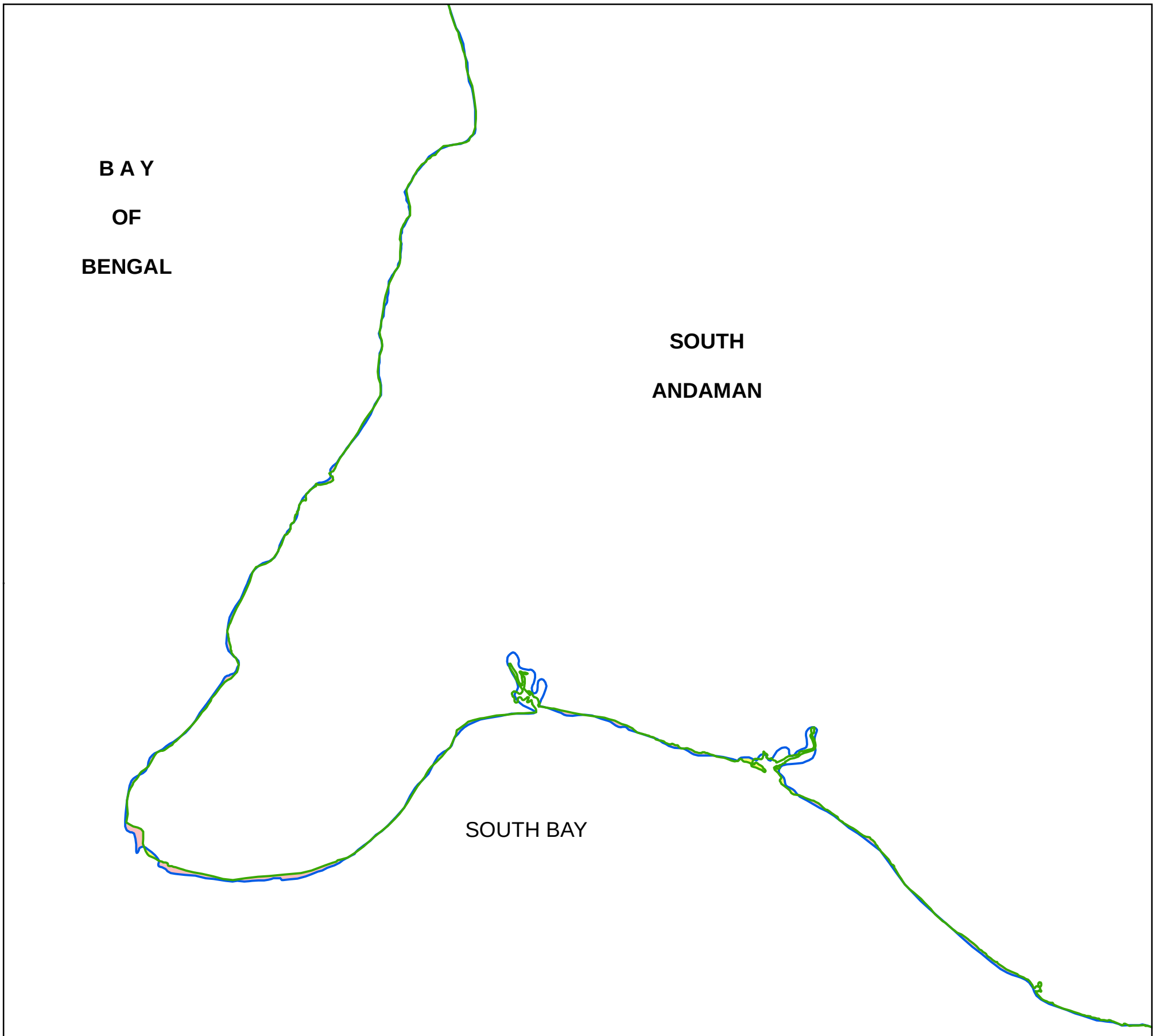
SOUTH ANDAMAN

SHEET NO. 87B06SE



Legend

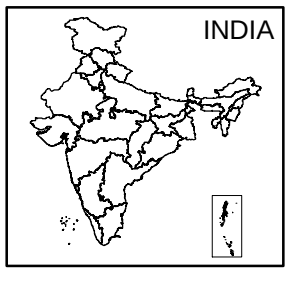
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

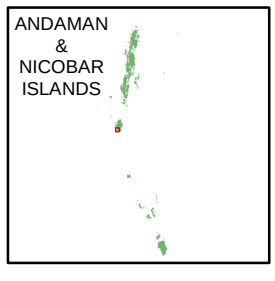
0 2

Scale in Km

INDEX TO SHEETS

SEA	87B06 NE	87B10 NW
SEA		87B10 SW
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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AND CENTRAL WATER COMMISSION, NEW DELHI

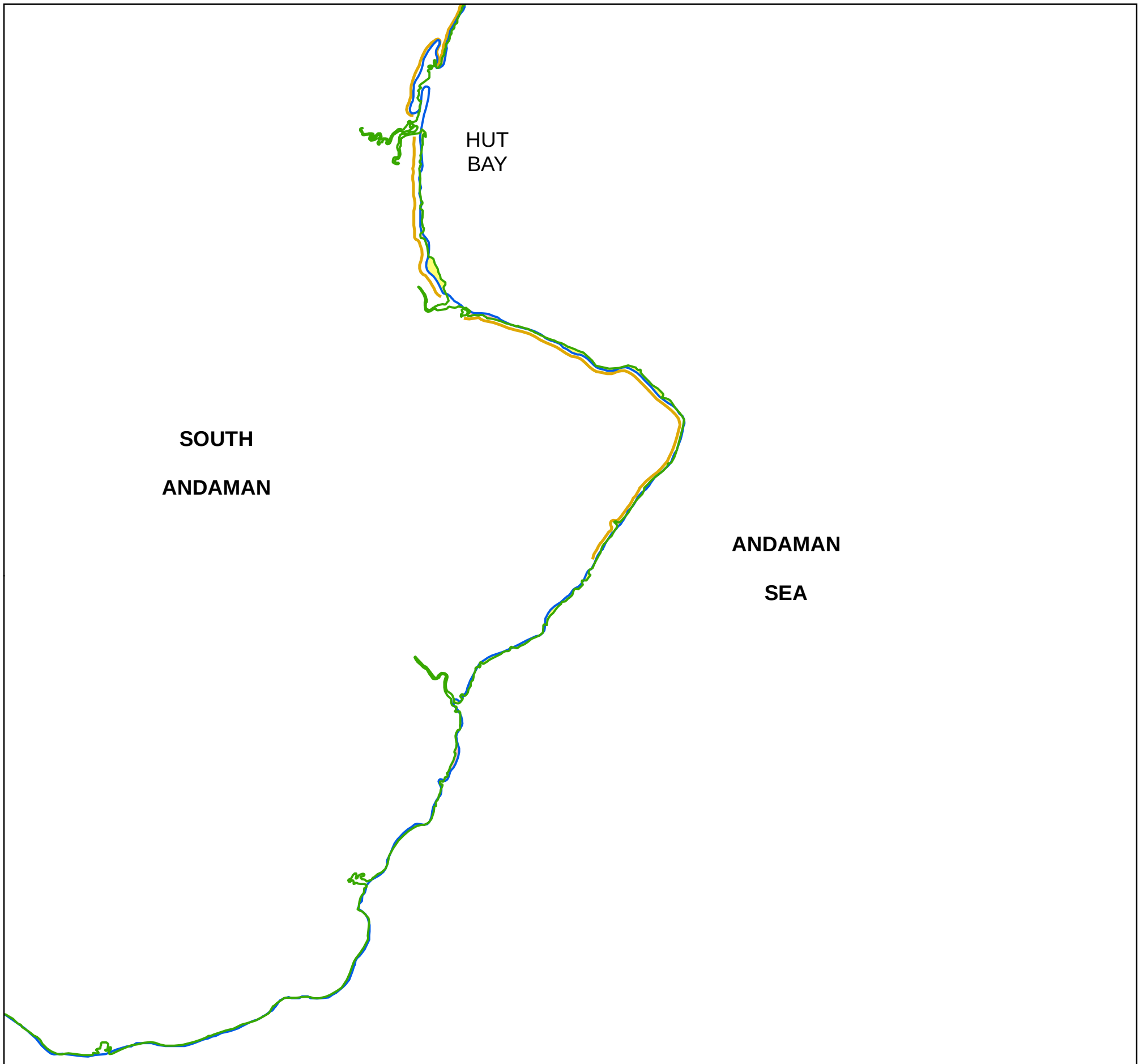
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 87B10SW

SOUTH ANDAMAN



Legend

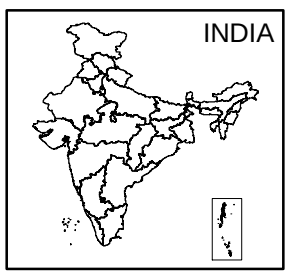
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

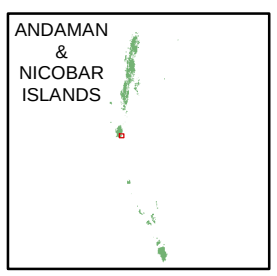
0 2

Scale in Km

INDEX TO SHEETS

87B06 NE	87B10 NW	SEA
87B06 SE		SEA
SEA	SEA	SEA

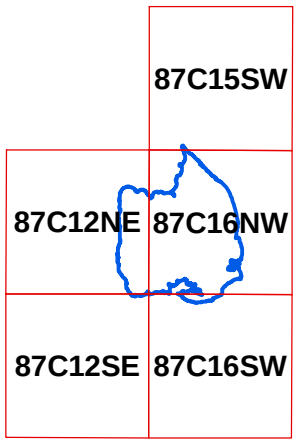


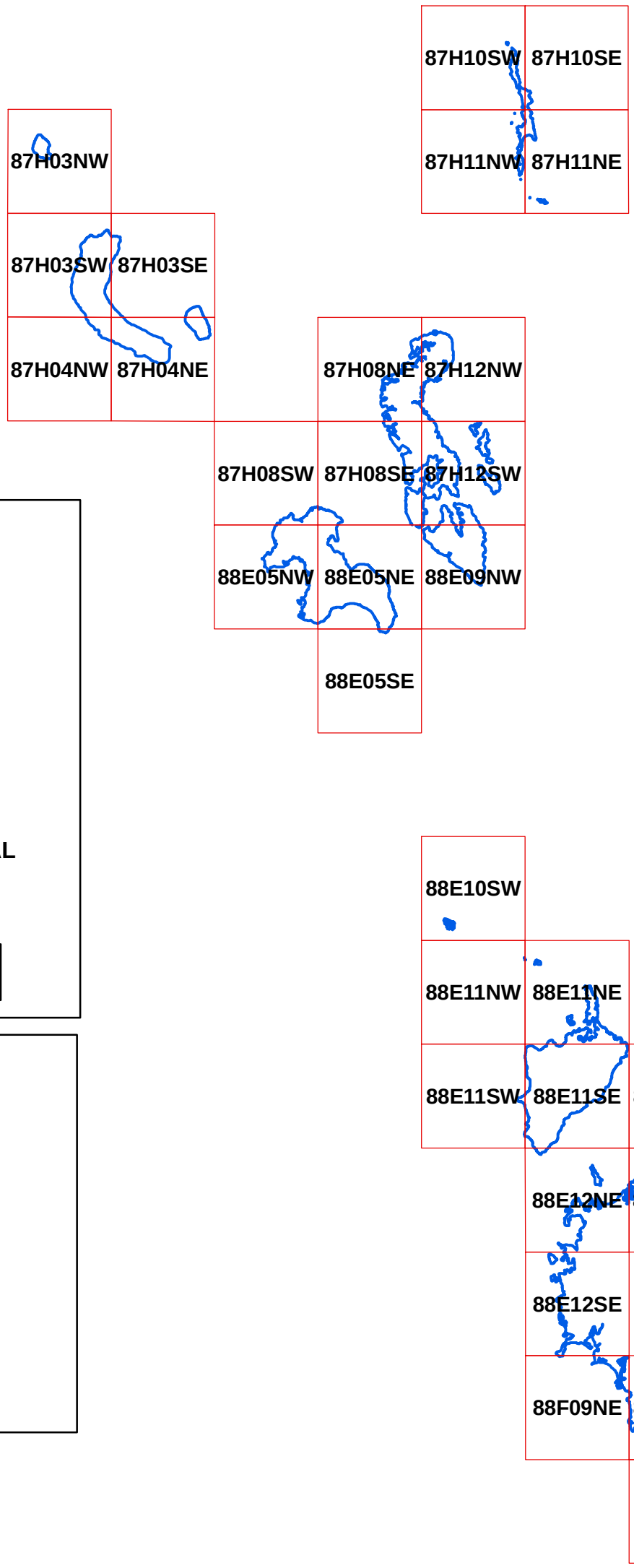


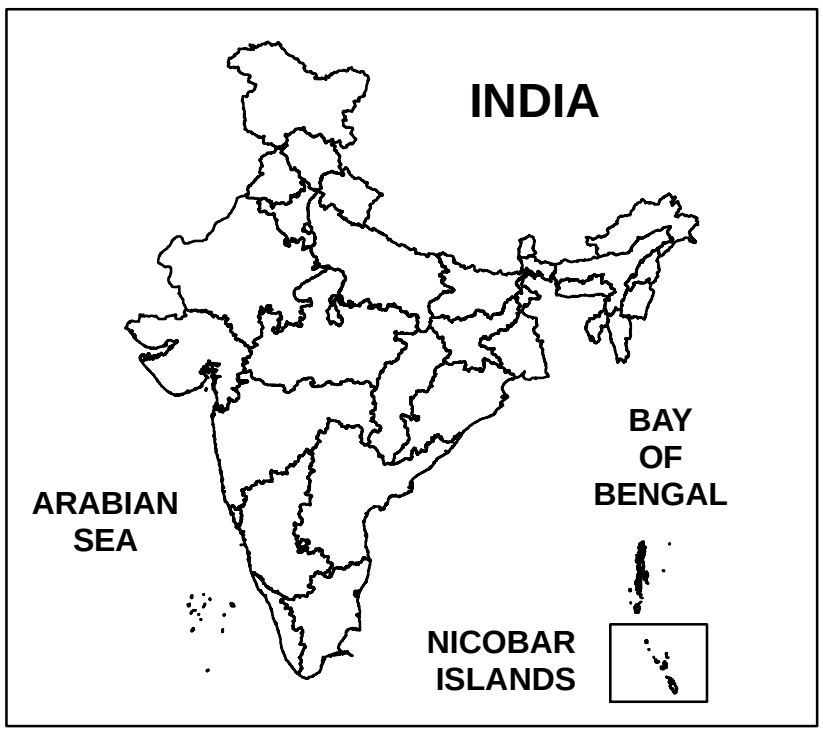
DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

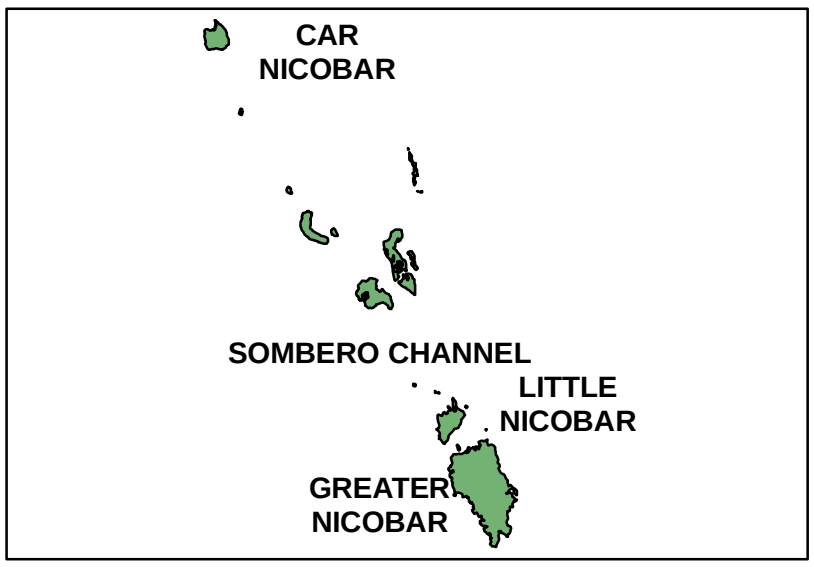
PREPARED BY:
SPACE APPLICATIONS CENTRE, AHMEDABAD
AND CENTRAL WATER COMMISSION, NEW DELHI

SHORELINE CHANGES
NICOBAR ISLANDS









HTL 2004-06

SHORELINE CHANGES NICOBAR ISLANDS

CAR NICOBAR

N

NANCOWRY ISLANDS

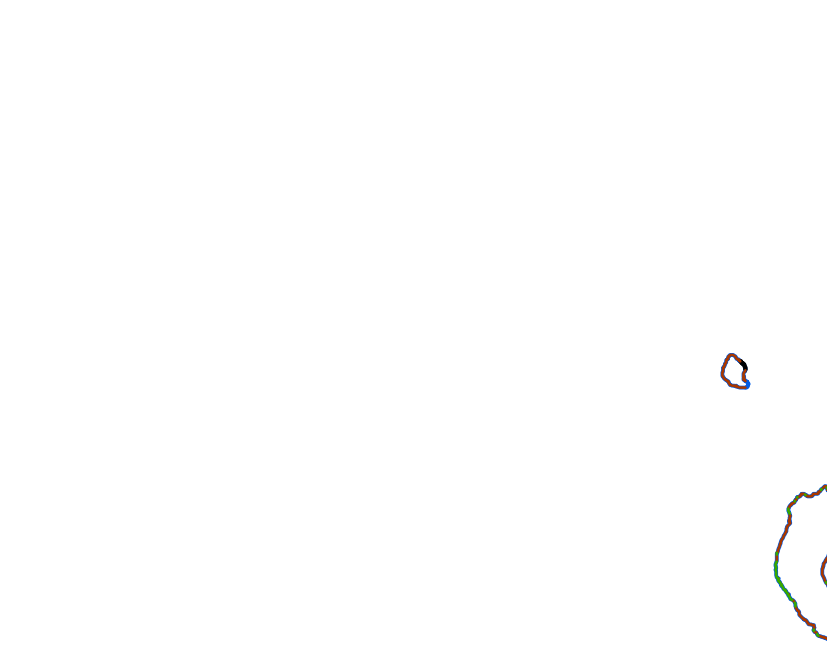
KATCHALL ISLANDS

SOMBERO CHANNEL

LITTLE NICOBAR

GREATER NICOBAR

GREATER CHANNEL



LEGEND

- ACCRETING COAST
- ERODING COAST
- STABLE COAST
- HTL 2004-06

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

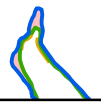
CAR NICOBAR

SHEET NO. 87C15SW

ANDAMAN

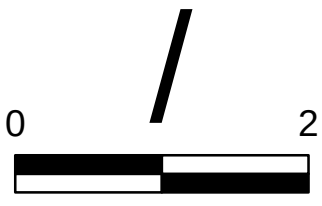
SEA

TEN DEGREE
CHANNEL



Legend

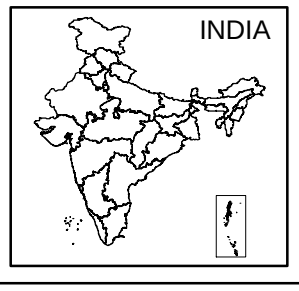
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

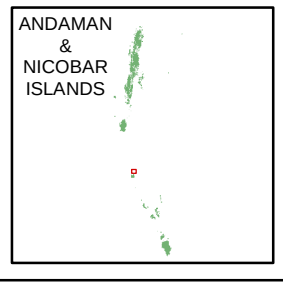


Scale in Km

INDEX TO SHEETS

SEA	SEA	87C15 SW
SEA		87C16 NW
SEA	87C12 SE	87C16 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

CAR NICOBAR

SHEET NO. 87C12NE

Legend

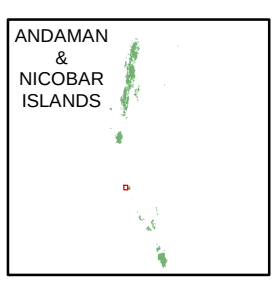
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	87C15 SW
SEA		87C16 NW
SEA	87C12 SE	87C16 SW



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

CAR NICOBAR

SHEET NO. 87C16NW

Legend

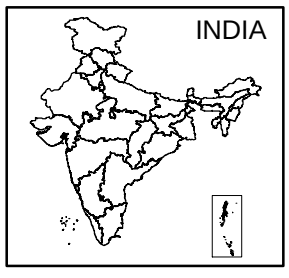
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE
- SEA WALL

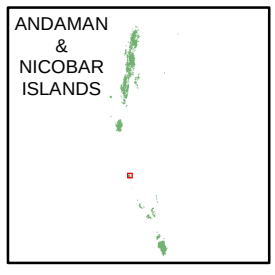
0 2

Scale in Km

INDEX TO SHEETS

SEA	87C15 SW	SEA
87C12 NE		SEA
87C12 SE	87C16 SW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

CAR NICOBAR

FOR OFFICIAL USE ONLY

SHEET NO. 87C12SE

Legend

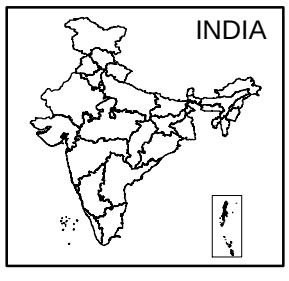
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

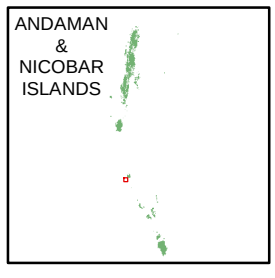
0 2

Scale in Km

INDEX TO SHEETS

SEA	87C12 NE	87C16 NW
SEA		87C16 SW
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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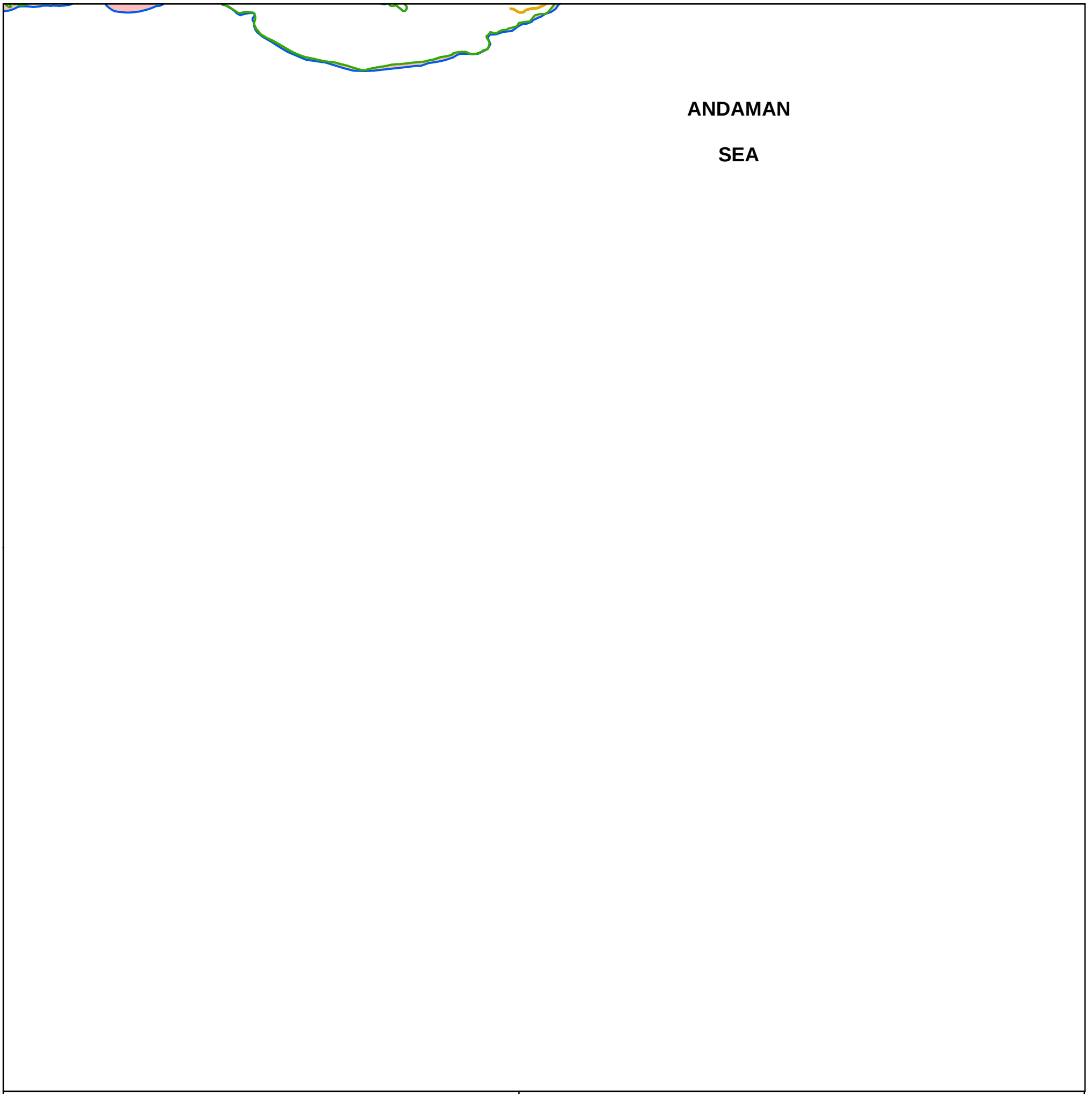
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

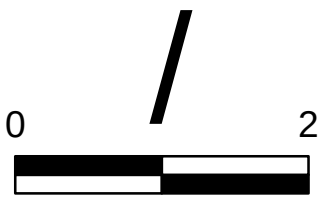
CAR NICOBAR

SHEET NO. 87C16SW



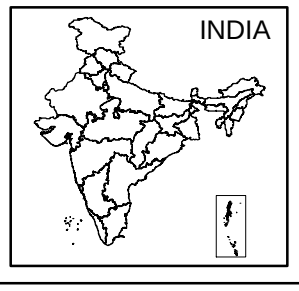
Legend

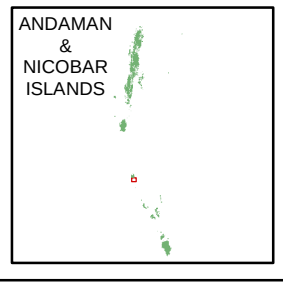
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL



INDEX TO SHEETS

87C12 NE	87C16 NW	SEA
87C12 SE		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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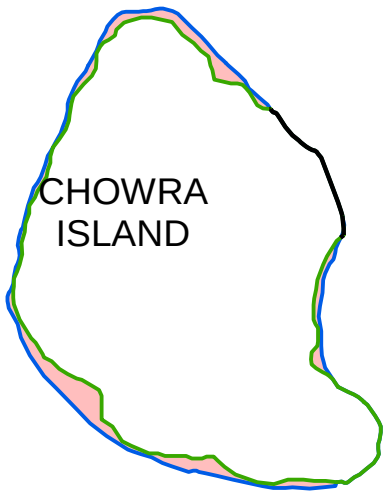
NANCOWRY

SHEET NO. 87H03NW



PANCHAL
CHANNEL

Legend

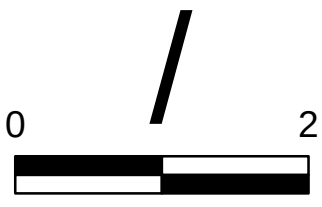
EROSION

ACCRETION

STABLE

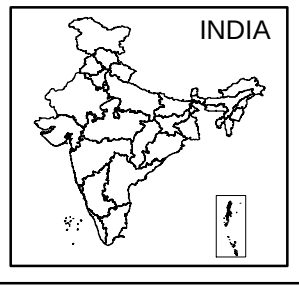
HIGH-TIDE LINE 2004-06

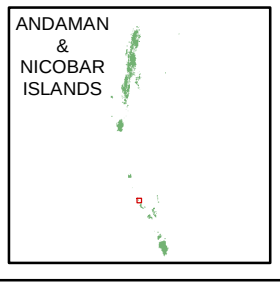
HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	87H03 SW	87H03 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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NANCOWRY

SHEET NO. 87H10SW

PAIRA ROCK ISLAND

ANDAMAN SEA

TILLANCHANG ISLAND

Legend

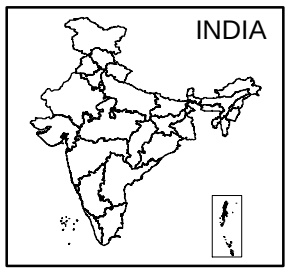
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

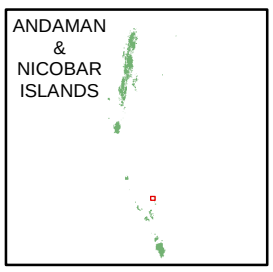
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		87H10 SE
SEA	87H11 NW	87H11 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
SPACE APPLICATIONS CENTRE, AHMEDABAD
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 87H10SE

NANCOWRY

ANDAMAN

SEA

TUANCHANG
ISLAND

Legend

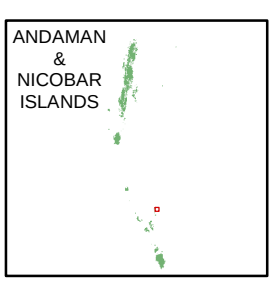
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
87H10 SW		SEA
87H11 NW	87H11 NE	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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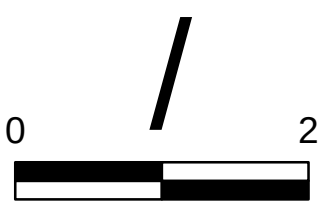
NANCOWRY

SHEET NO. 87H11NW

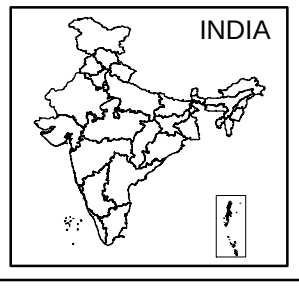
Legend

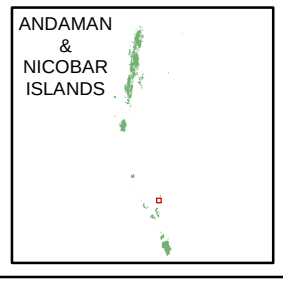
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE



INDEX TO SHEETS

SEA	87H10 SW	87H10 SE
SEA		87H11 NE
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
SPACE APPLICATIONS CENTRE, AHMEDABAD
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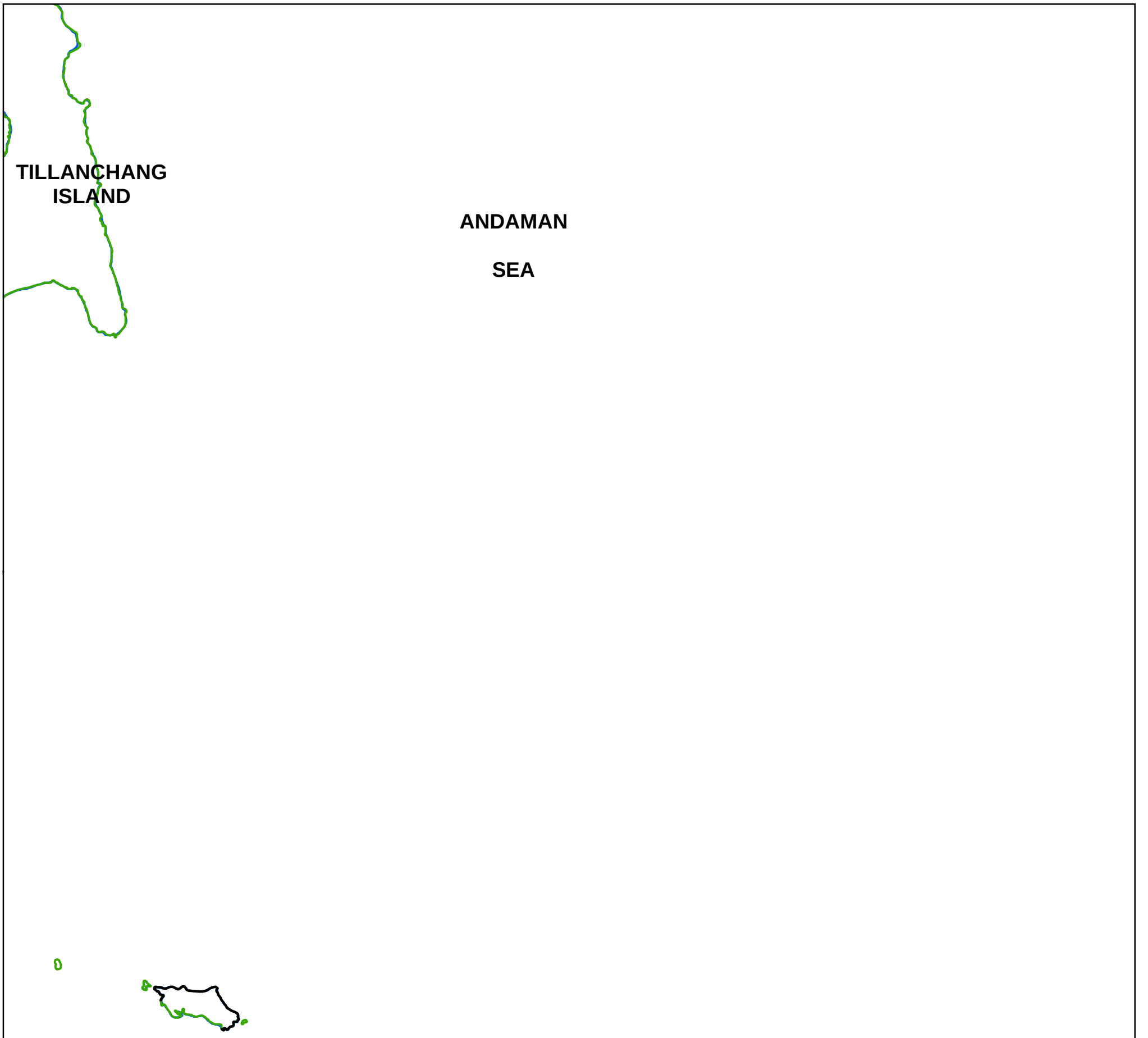
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

NANCOWRY

SHEET NO. 87H11NE



Legend

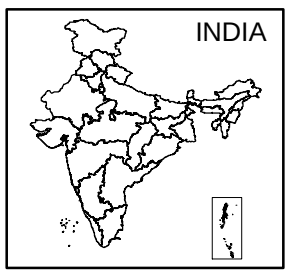
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

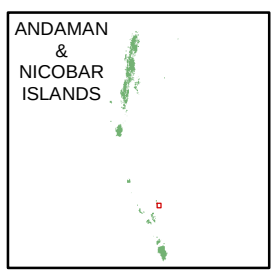
0 2

Scale in Km

INDEX TO SHEETS

87H10 SW	87H10 SE	SEA
87H11 NW		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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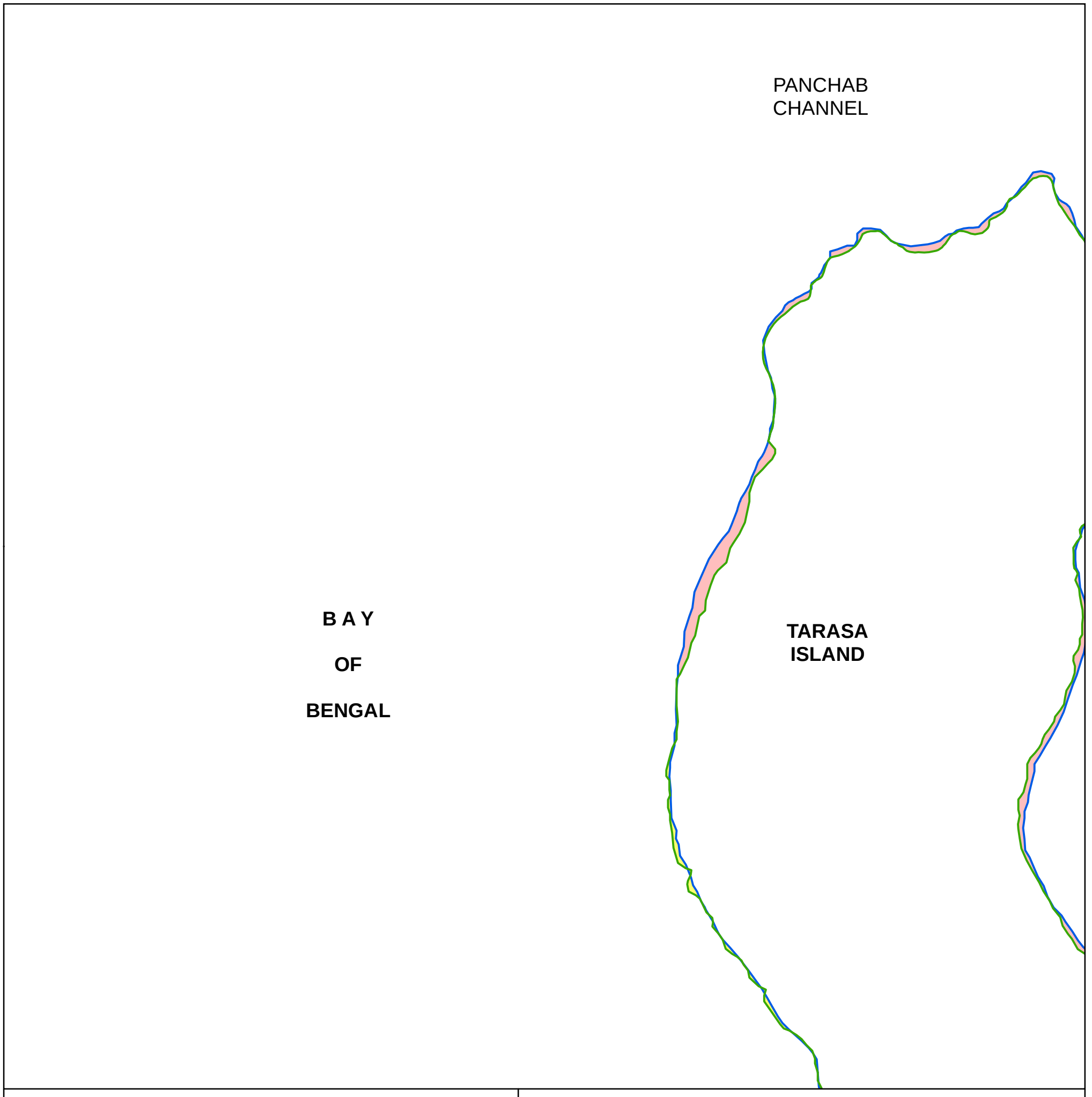
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NANCOWRY

FOR OFFICIAL USE ONLY

SHEET NO. 87H03SW



Legend

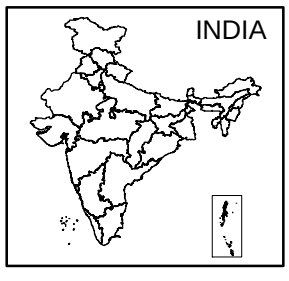
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

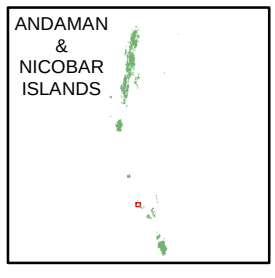
0 2

Scale in Km

INDEX TO SHEETS

SEA	87H03 NW	SEA
SEA		87H03 SE
SEA	87H04 NW	87H04 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 87H03SE

NANCOWRY

PANCHAL CHANNEL

TARASA ISLAND

BOMPOKA ISLAND

Legend

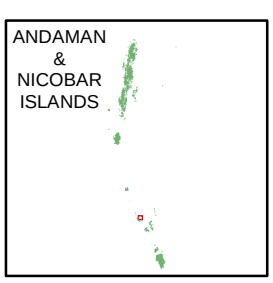
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

0 2

Scale in Km

INDEX TO SHEETS

87H03 NW	SEA	SEA
87H03 SW		SEA
87H04 NW	87H04 NE	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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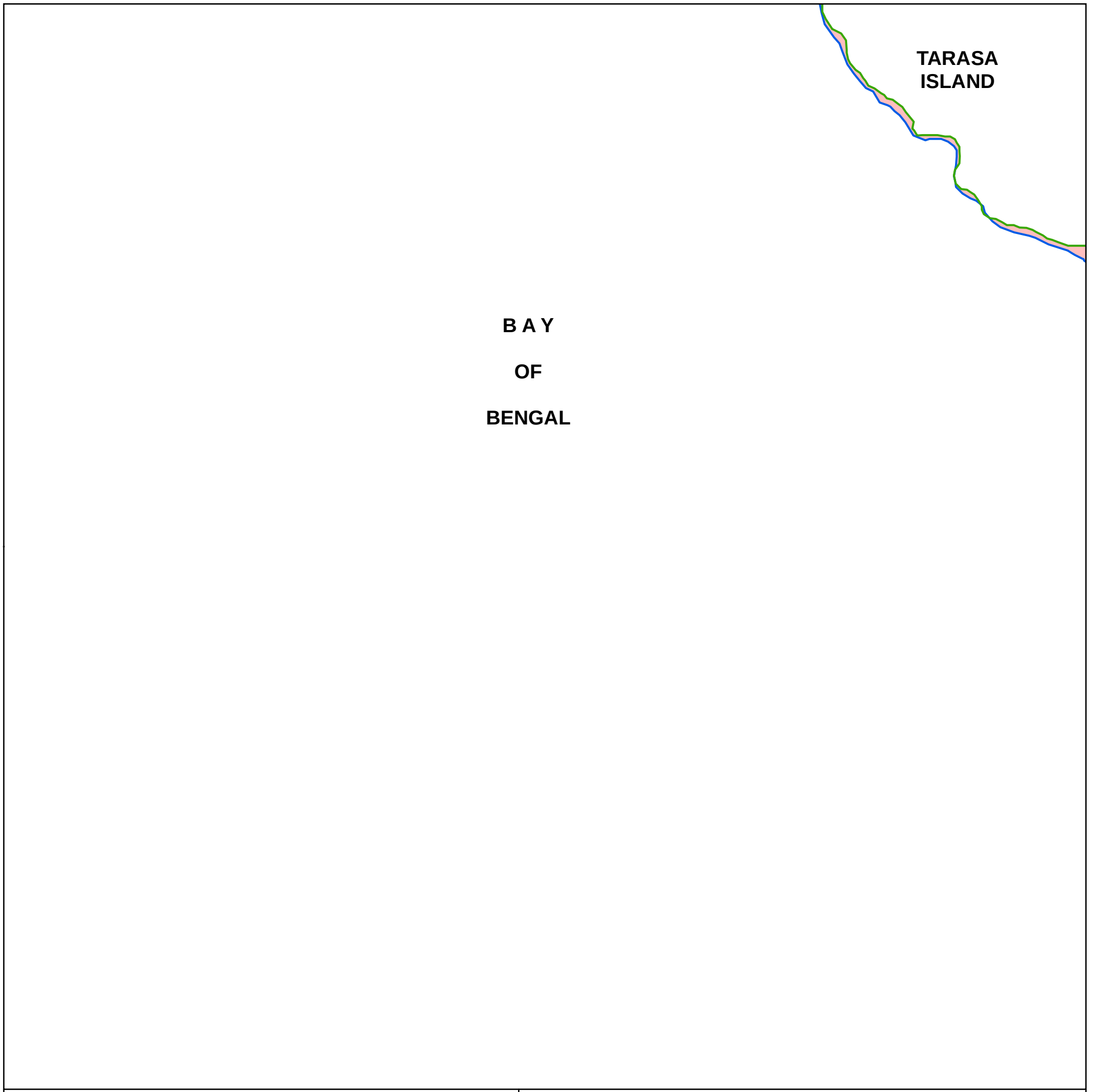
NANCOWRY

SHEET NO. 87H04NW



Legend

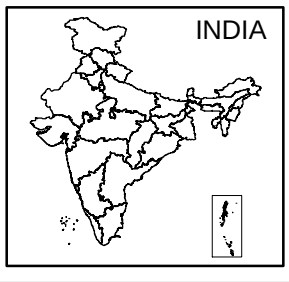
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

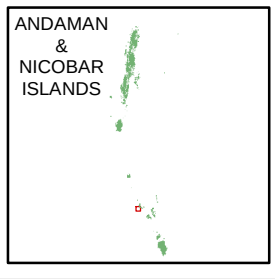
0 2

Scale in Km

INDEX TO SHEETS

SEA	87H03 SW	87H03 SE
SEA		87H04 NE
SEA	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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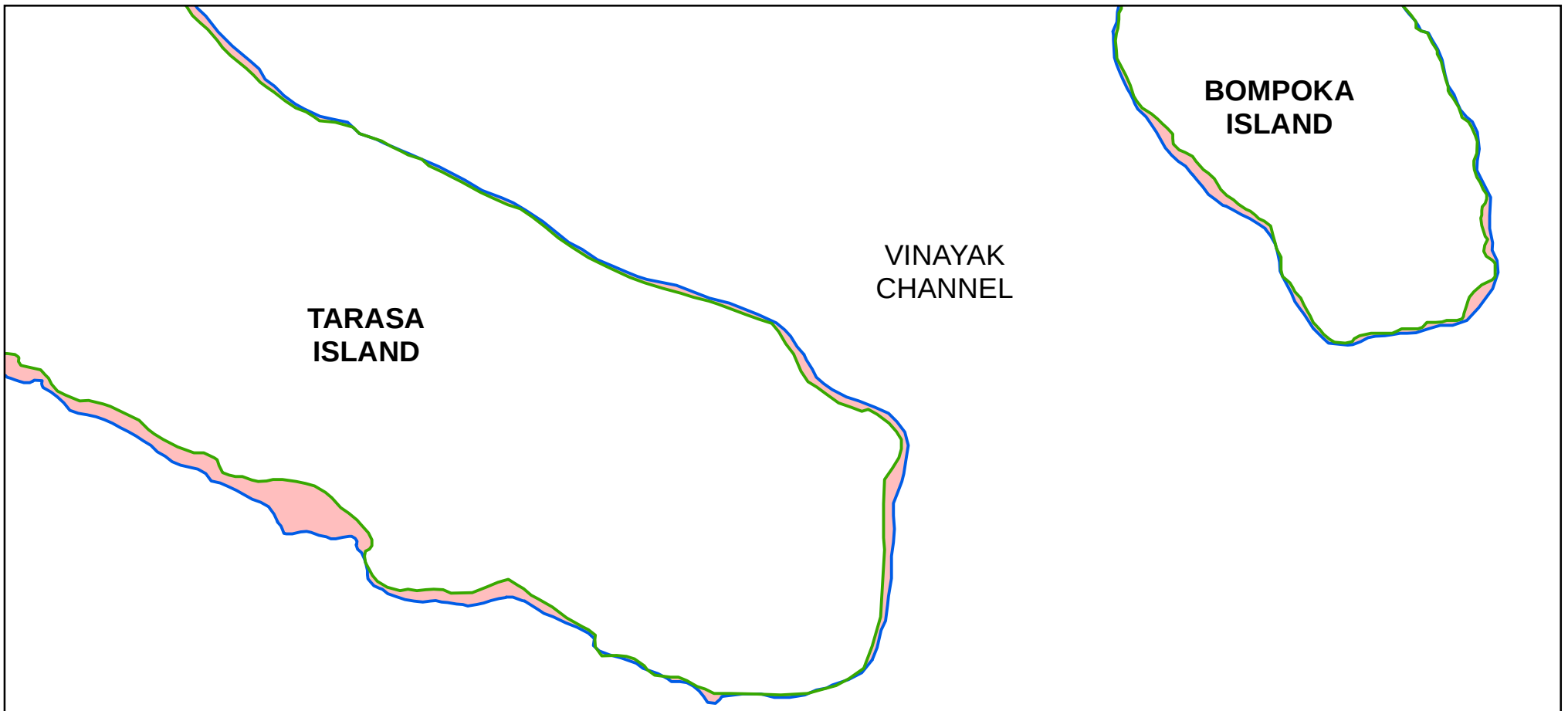
SHEET NO. 87H04NE

NANCOWRY



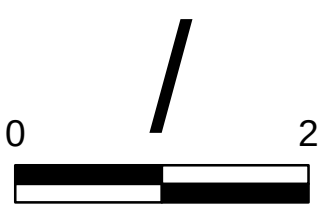
B A Y

OF

BENGAL

Legend

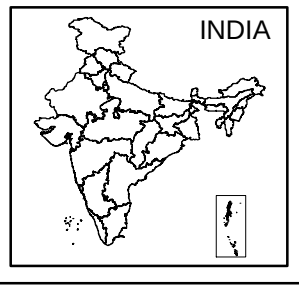
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

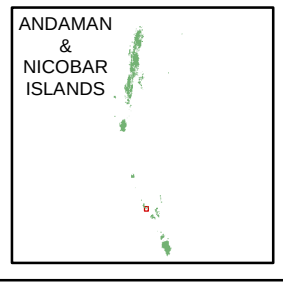


Scale in Km

INDEX TO SHEETS

87H03 SW	87H03 SE	SEA
87H04 NW		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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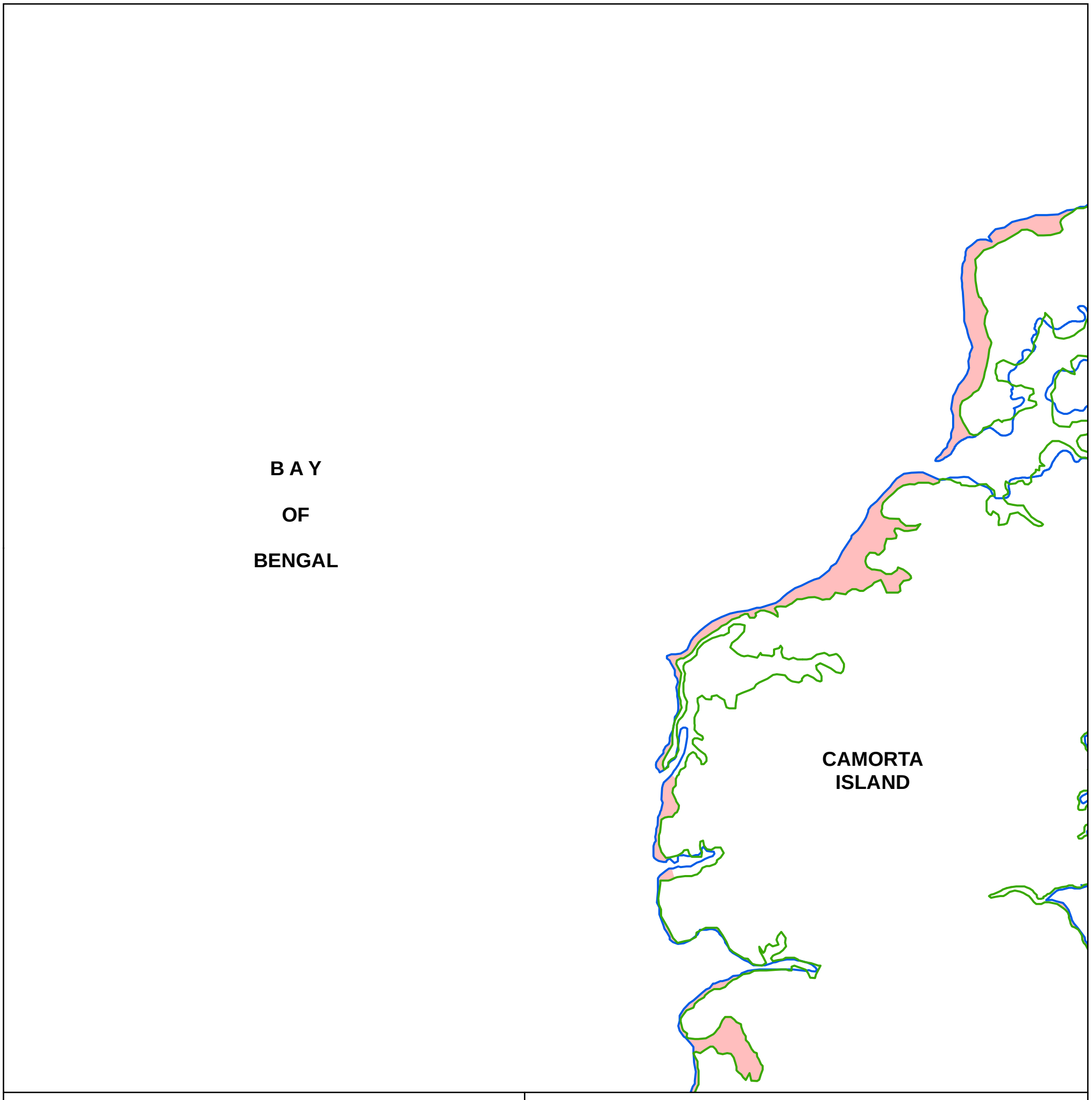
NANCOWRY

SHEET NO. 87H08NE



Legend

EROSION

HIGH-TIDE LINE 2004-06

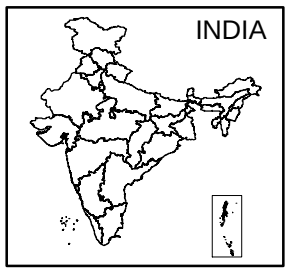
HIGH-TIDE LINE 1989-91

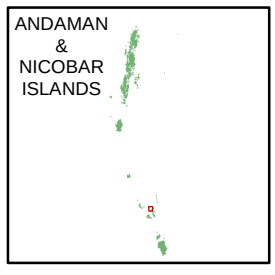
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
SEA		87H12 NW
87H08 SW	87H08 SE	87H12 SW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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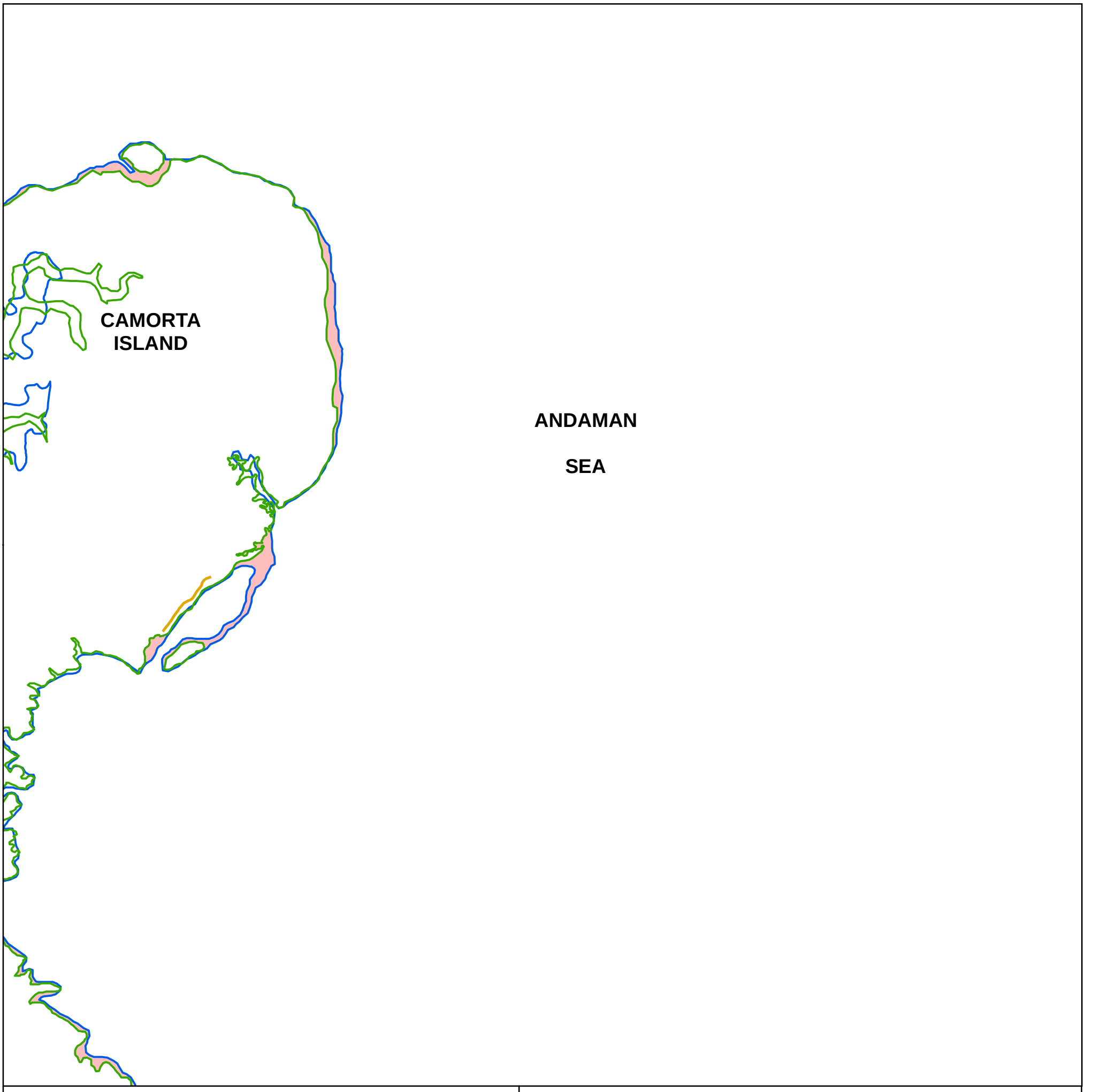
NANCOWRY

SHEET NO. 87H12NW



Legend

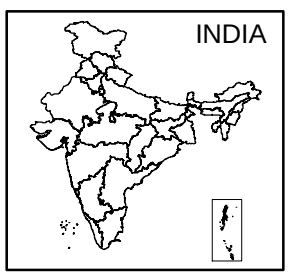
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

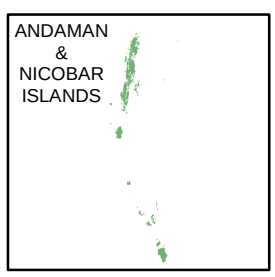
0 2

Scale in Km

INDEX TO SHEETS

SEA	SEA	SEA
87H08 NE		SEA
87H08 SE	87H12 SW	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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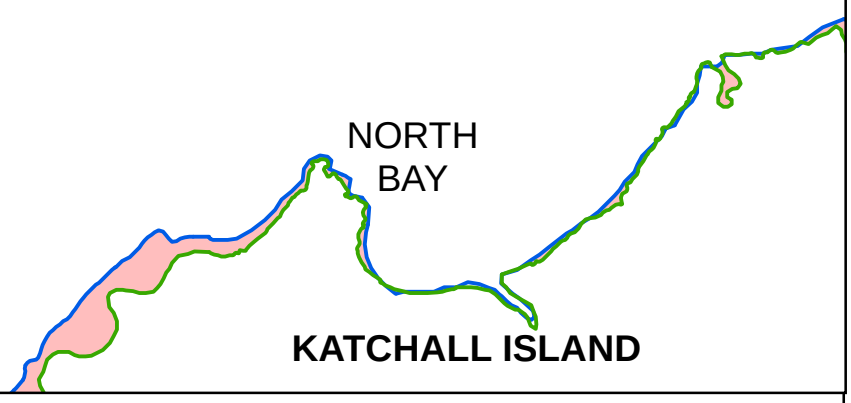
NANCOWRY

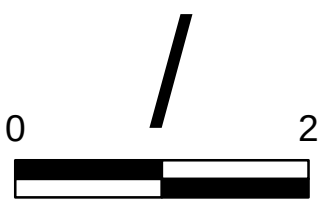
SHEET NO. 87H08SW

B A Y OF BENGAL



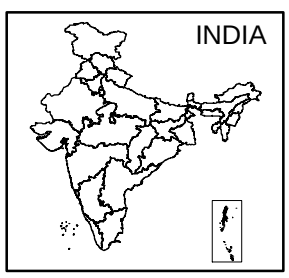
Legend

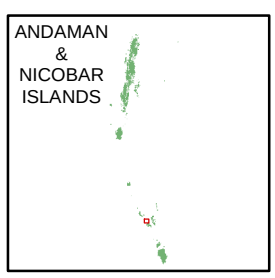
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91



INDEX TO SHEETS

87H04 NE	SEA	87H08 NE
SEA		87H08 SE
SEA	88E05 NW	88E05 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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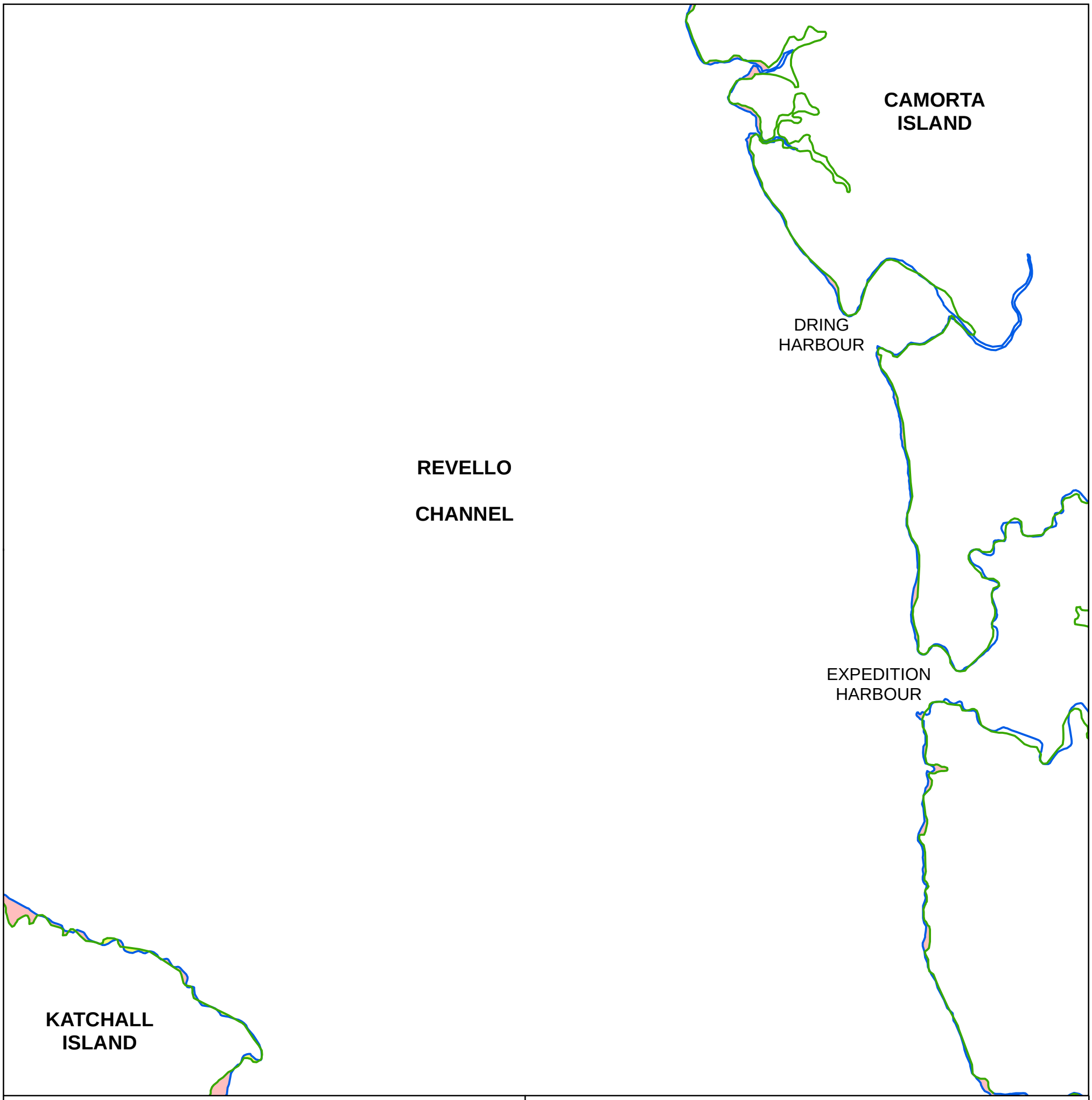
NANCOWRY

SHEET NO. 87H08SE



Legend

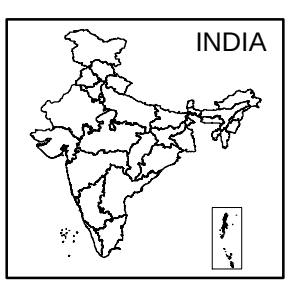
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

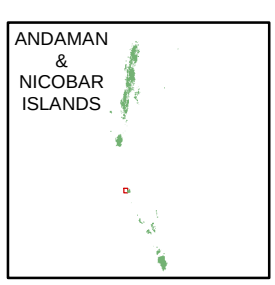
0 2

Scale in Km

INDEX TO SHEETS

SEA	87H08 NE	87H12 NW
87H08 SW		87H12 SW
88E05 NW	88E05 NE	88E09 NW





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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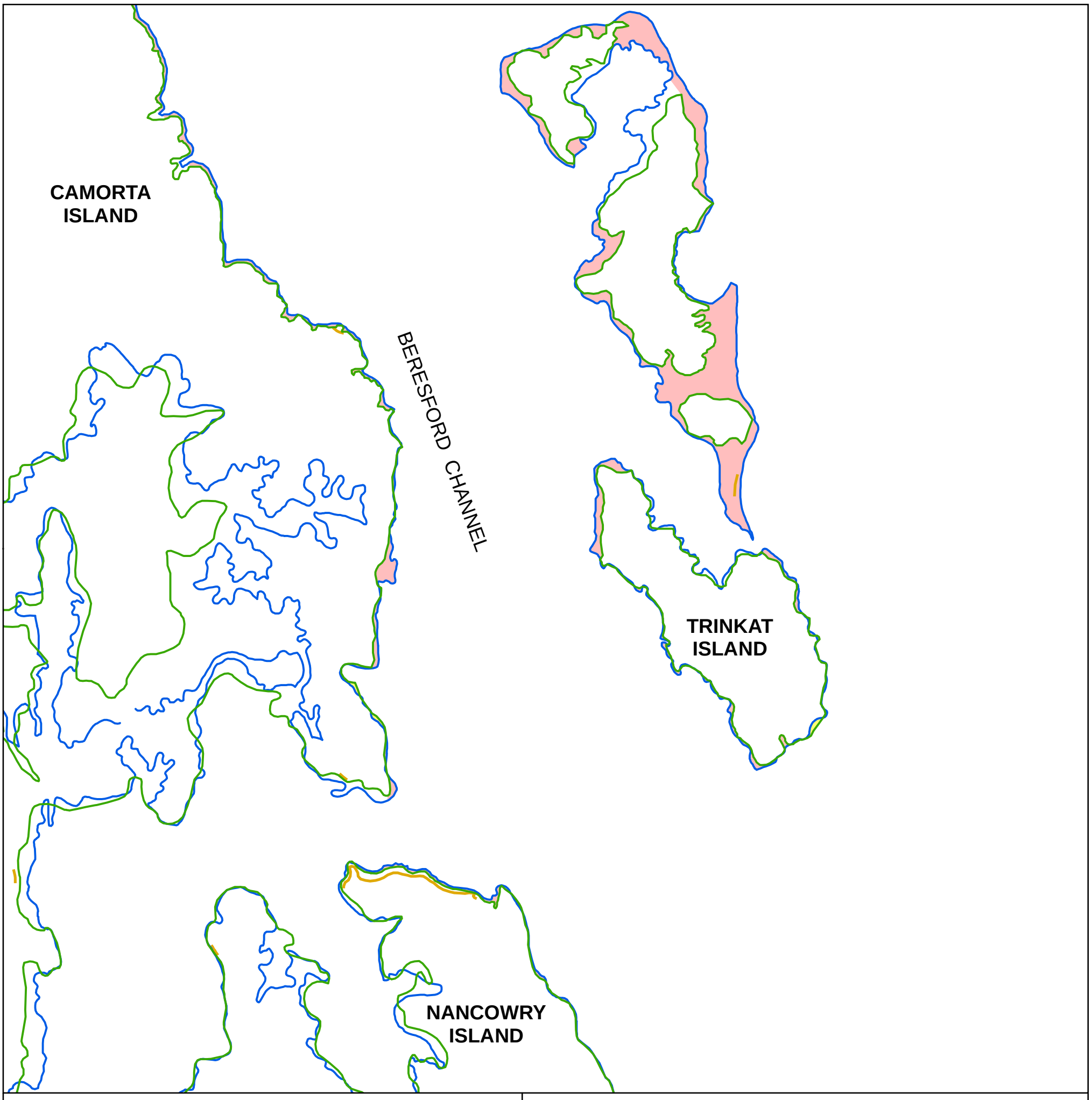
NANCOWRY

SHEET NO. 87H12SW



Legend

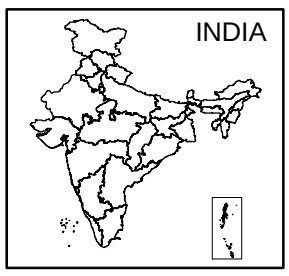
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

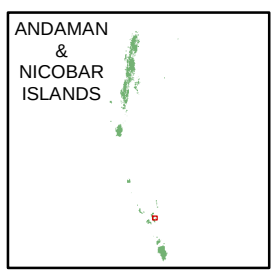
0 2

Scale in Km

INDEX TO SHEETS

87H08 NE	87H12 NW	SEA
87H08 SE		SEA
88E05 NE	88E09 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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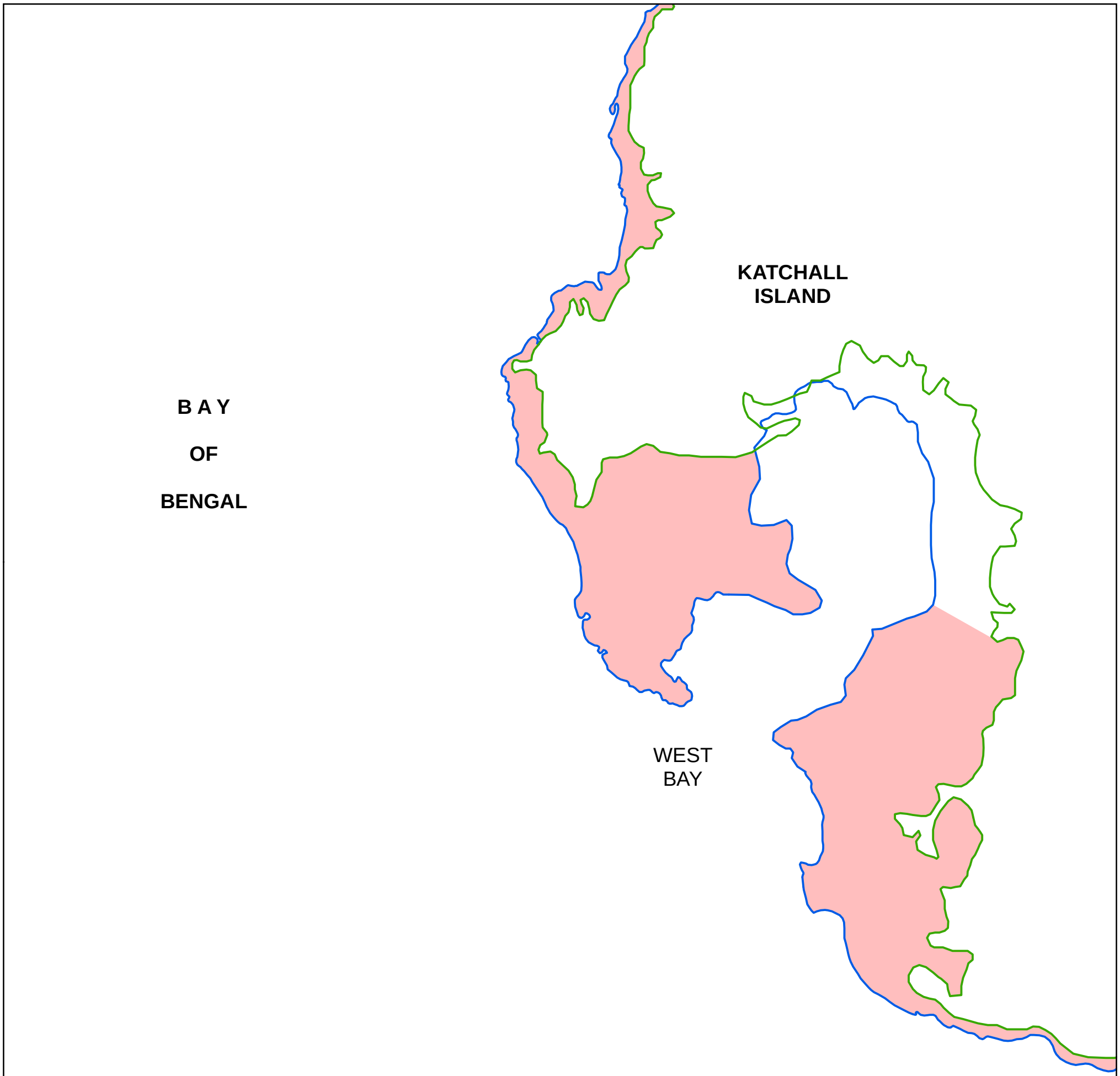
NANCOWRY

SHEET NO. 88E05NW



Legend

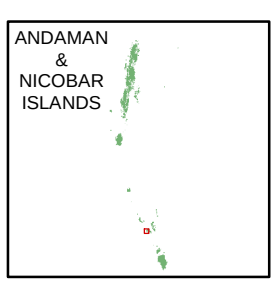
- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	87H08 SW	87H08 SE
SEA		88E05 NE
SEA	SEA	88E05 SE



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 88E05NE

NANCOWRY

EAST BAY

REVELLO CHANNEL

KATCHALL ISLAND

Legend

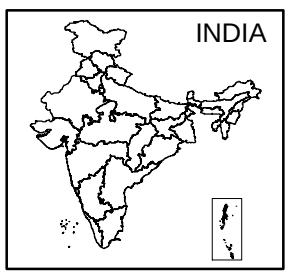
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

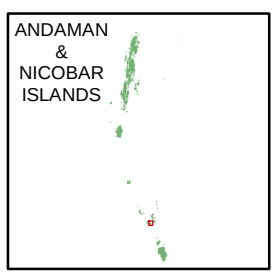
0 2

Scale in Km

INDEX TO SHEETS

87H08 SW	87H08 SE	87H12 SW
88E05 NW		88E09 NW
SEA	88E05 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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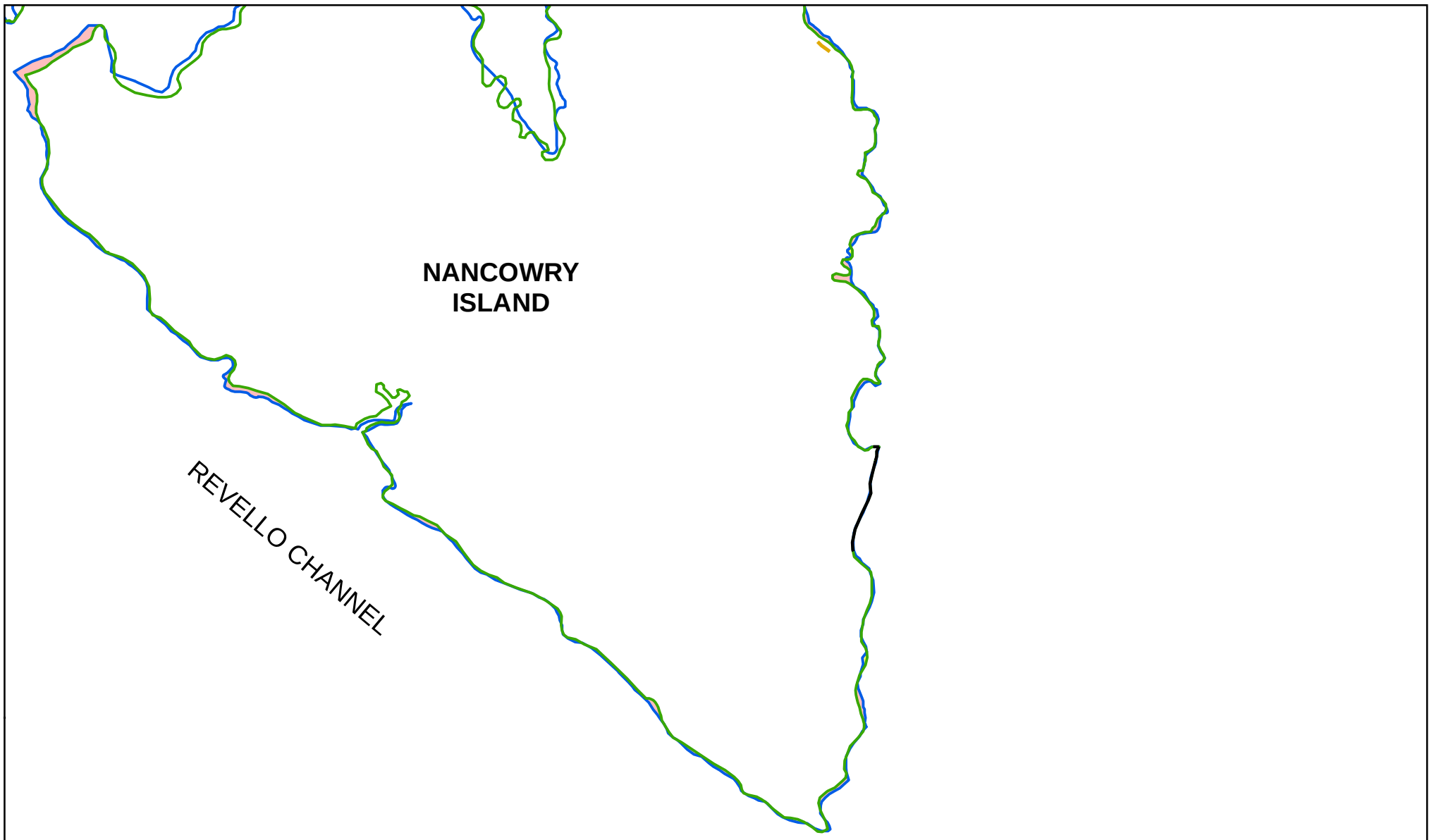
SHEET NO. 88E09NW

NANCOWRY



SOMBERO CHANNEL

Legend

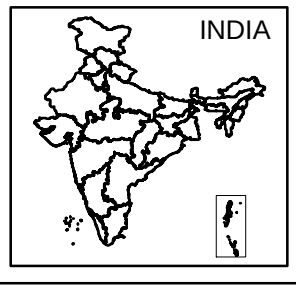
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL
- STABLE

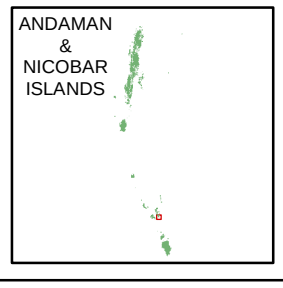
0 2

Scale in Km

INDEX TO SHEETS

87H08 SE	87H12 SW	SEA
88E05 NE		SEA
88E05 SE	SEA	SEA





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 88E05SE

NANCOWRY

CAPE ALBAN

SOMBERO
CHANNEL

Legend

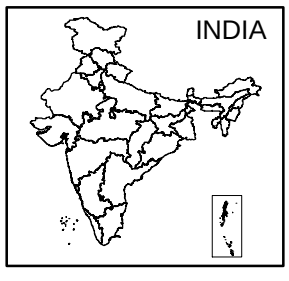
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

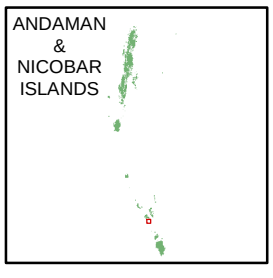
0 2

Scale in Km

INDEX TO SHEETS

88E05 NW	88E05 NE	88E09 NW
SEA		SEA
SEA	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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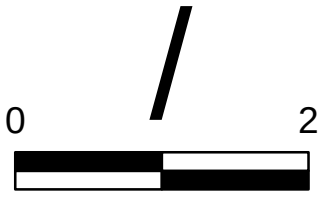
NANCOWRY

SHEET NO. 88E10SW

ANDAMAN SEA

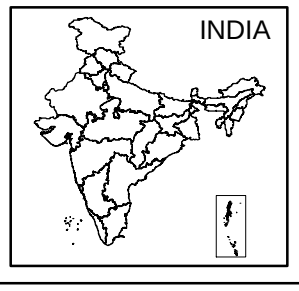
Legend

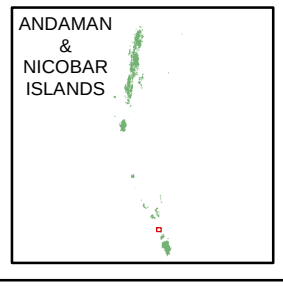
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE



INDEX TO SHEETS

SEA	SEA	SEA
SEA		SEA
SEA	88E11 NW	88E11 NE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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NANCOWRY

SHEET NO. 88E11NW

TRAK
ISLAND

B A Y

OF

BENGAL

Legend

HIGH-TIDE LINE 2004-06

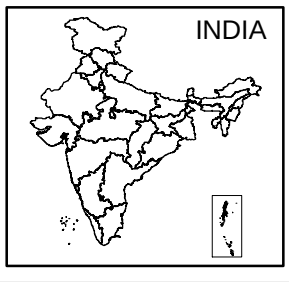
HIGH-TIDE LINE 1989-91

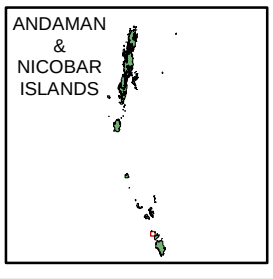
0 2

Scale in Km

INDEX TO SHEETS

SEA	88E10 SW	SEA
SEA		88E11 NE
SEA	88E11 SW	88E11 SE





DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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NANCOWRY

SHEET NO. 88E11NE

TREIS ISLAND

ANDAMAN

SEA

GATEWAY
BAY

PULO MILE
ISLAND

LITTLE
NICOBAR
ISLAND

Legend

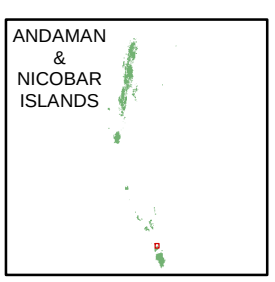
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

88E10 SW	SEA	SEA
88E11 NW		SEA
88E11 SW	88E11 SE	88E15 SW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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NANCOWRY

SHEET NO. 88E11SW

B A Y

OF

BENGAL

Legend

EROSION

HIGH-TIDE LINE 2004-06

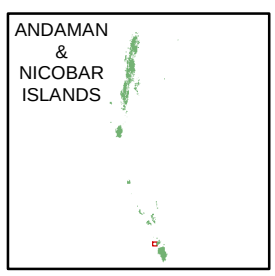
HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

SEA	88E11 NW	88E11 NE
SEA		88E11 SE
SEA	SEA	88E12 NE



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 88E11SE

NANCOWRY

LITTLE

NICOBAR

ISLAND

ST.GEORGE ' S
CHANNEL

Legend

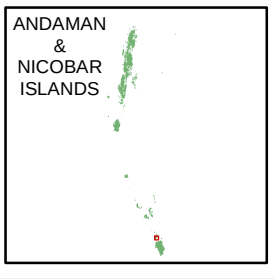
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

0 2

Scale in Km

INDEX TO SHEETS

88E11 NW	88E11 NE	SEA
88E11 SW		88E15 SW
SEA	88E12 NE	88E16 NW



DATA SOURCE:
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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

NANCOWRY

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SHEET NO. 88E15SW

ANDAMAN

SEA

CABRA
ISLAND

Legend

HIGH-TIDE LINE 2004-06

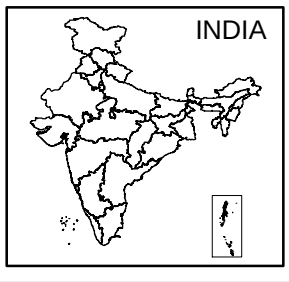
HIGH-TIDE LINE 1989-91

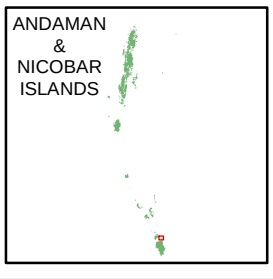
0 2

Scale in Km

INDEX TO SHEETS

88E11 NE	SEA	SEA
88E11 SE		SEA
88E12 NE	88E16 NW	88E16 NE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 88E12NE

NANCOWRY

ST. GEORGE 'S CHANNEL

KONDUL ISLAND

GREAT NICOBAR ISLAND

Legend

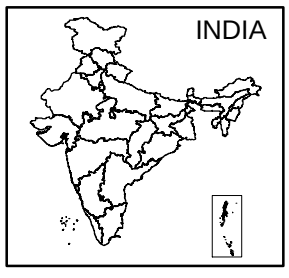
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

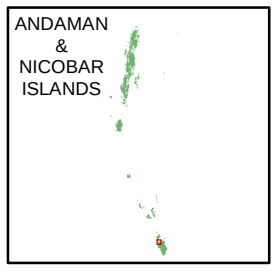
0 2

Scale in Km

INDEX TO SHEETS

88E11 SW	88E11 SE	88E15 SW
SEA		88E16 NW
SEA	88E12 SE	88E16 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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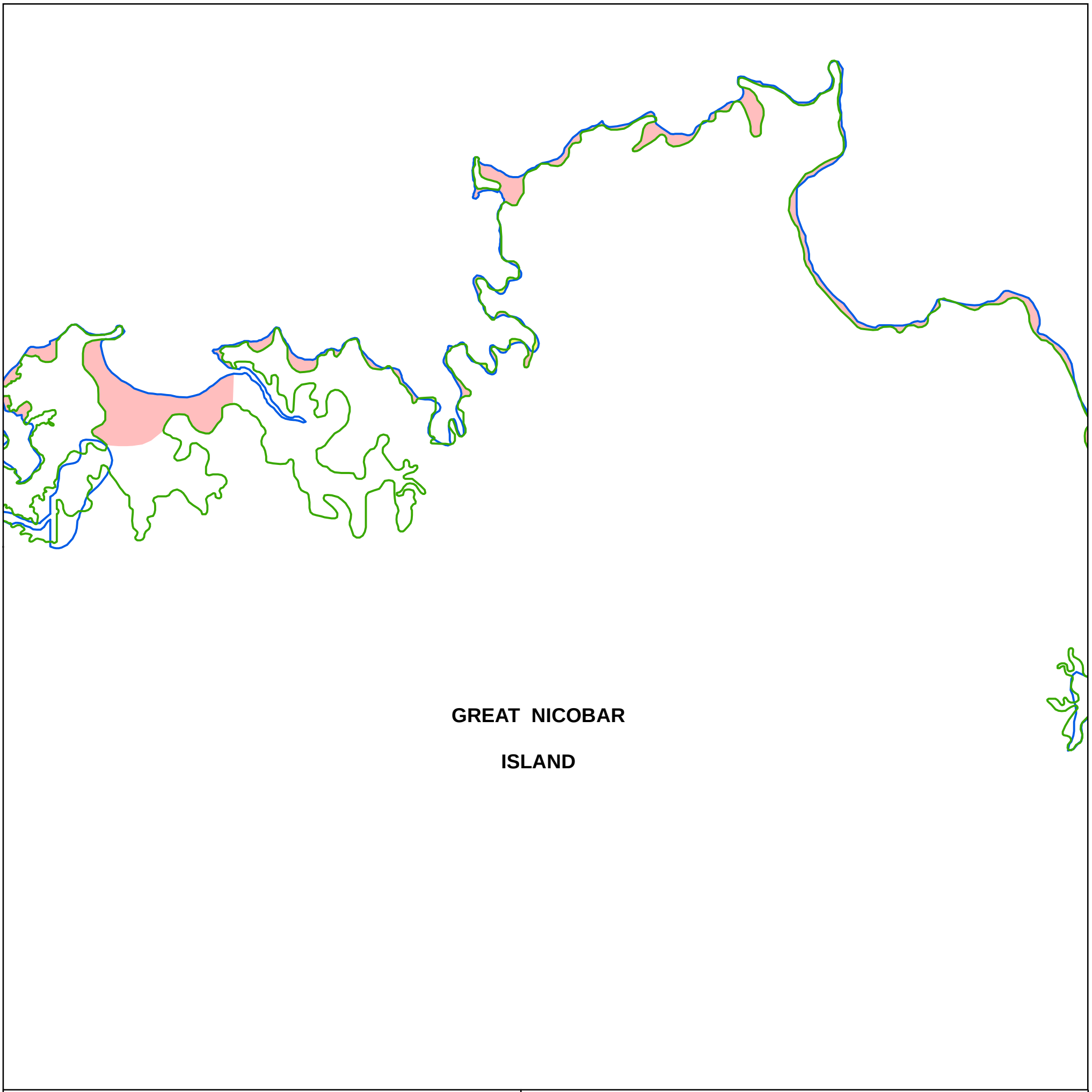
NANCOWRY

SHEET NO. 88E16NW



Legend

- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

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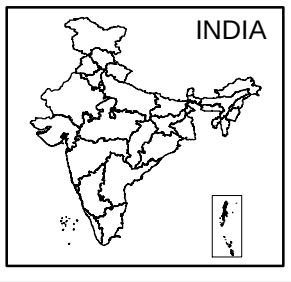
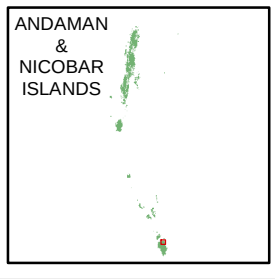
88E12 NE		88E16 NE
88E12 SE	88E16 SW	88E16 SE





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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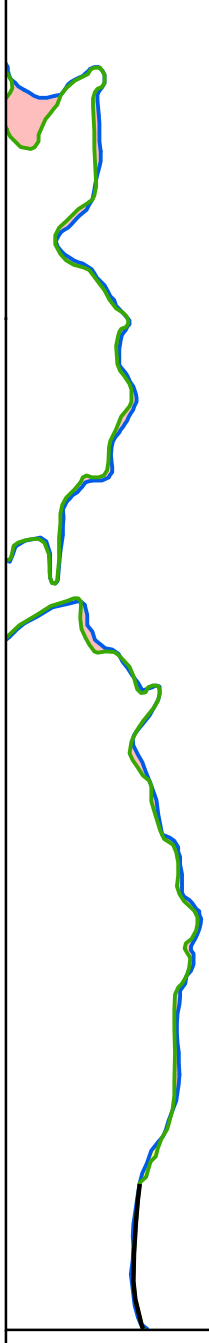
NANCOWRY

SHEET NO. 88E16NE



ANDAMAN

SEA

Legend

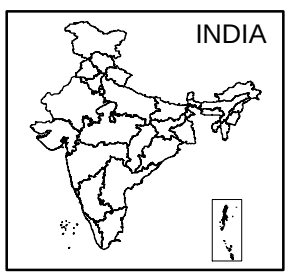
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- STABLE

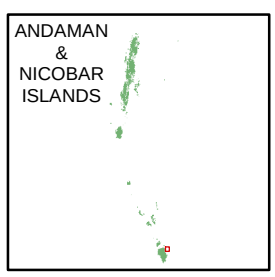
0 2

Scale in Km

INDEX TO SHEETS

88E15 SW	SEA	SEA
88E16 NW		SEA
88E16 SW	88E16 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 88E12SE

NANCOWRY

GREAT NICOBAR ISLAND

B A Y OF BENGAL

CASUARINA BAY

Legend

EROSION

HIGH-TIDE LINE 2004-06

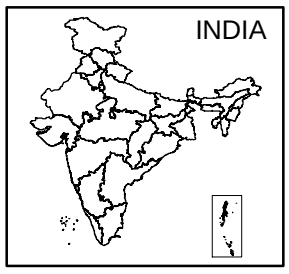
HIGH-TIDE LINE 1989-91

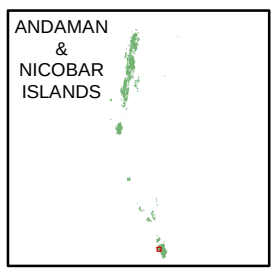
0 2

Scale in Km

INDEX TO SHEETS

SEA	88E12 NE	88E16 NW
SEA		88E16 SW
SEA	88F09 NE	88F13 NW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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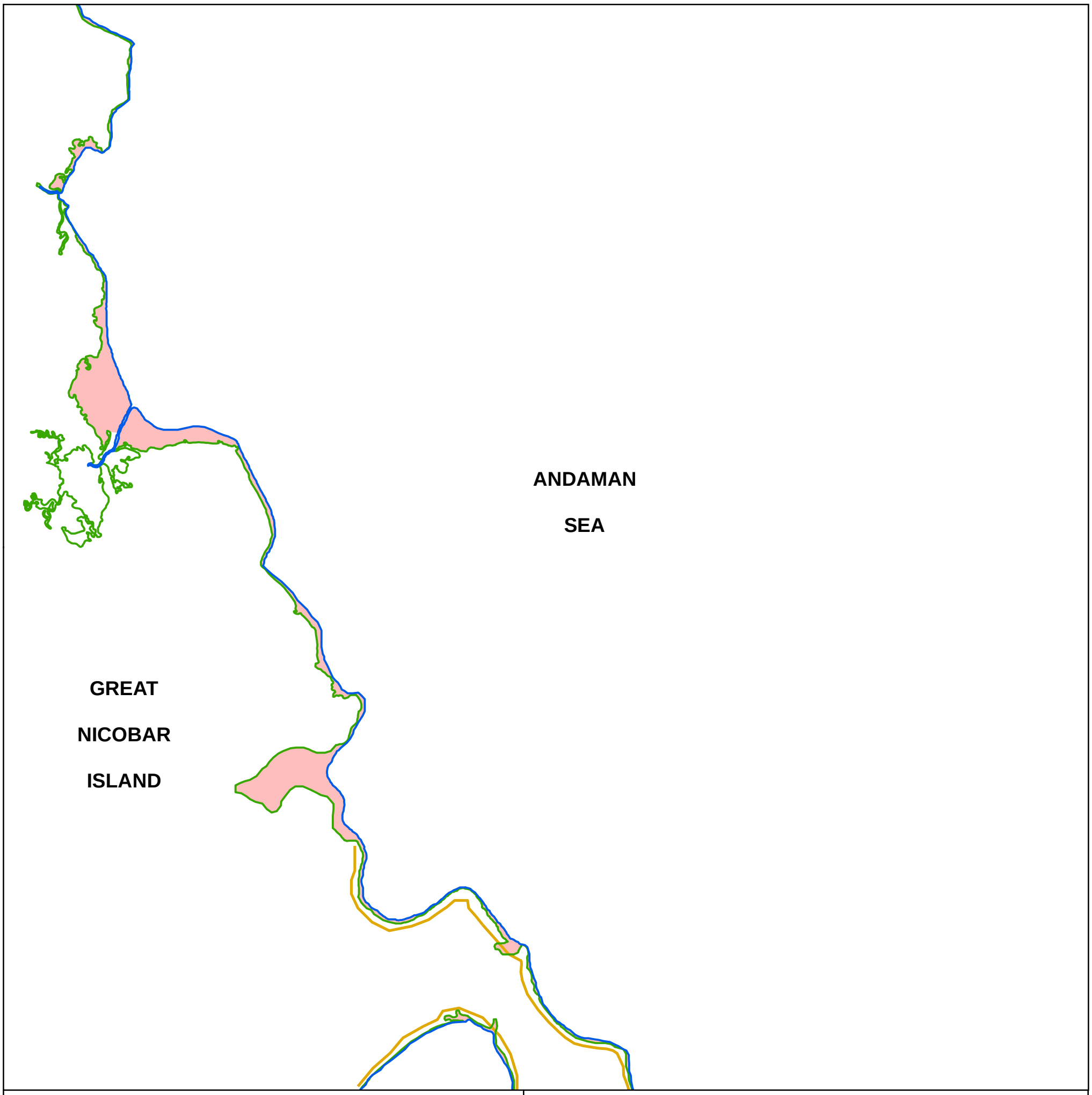
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 88E16SE

NANCOWRY



Legend

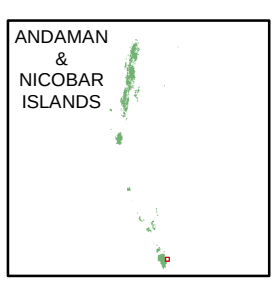
- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

0 2

Scale in Km

INDEX TO SHEETS

88E16 NW	88E16 NE	SEA
88E16 SW		SEA
88F13 NW	88F13 NE	SEA



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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AND CENTRAL WATER COMMISSION, NEW DELHI

SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 88F09NE

NANCOWRY

GREAT NICOBAR ISLAND

B A Y

OF

BENGAL

Legend

EROSION

HIGH-TIDE LINE 2004-06

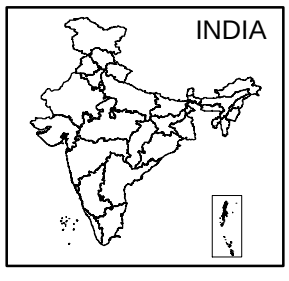
HIGH-TIDE LINE 1989-91

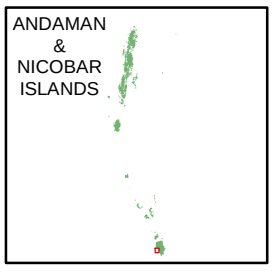
0 2

Scale in Km

INDEX TO SHEETS

SEA	88E12 SE	88E16 SW
SEA		88F13 NW
SEA	SEA	88F13 SW





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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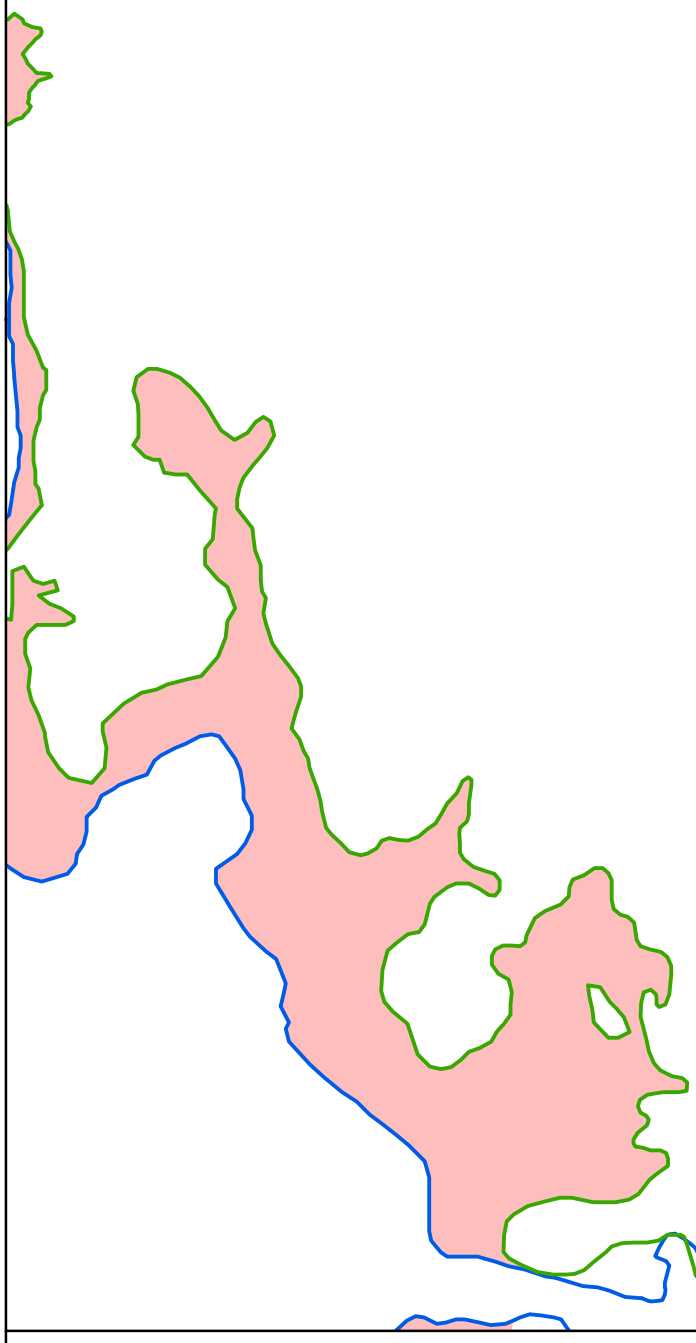
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

NANCOWRY

SHEET NO. 88F13NW



GREAT

NICOBAR

ISLAND

Legend

EROSION

HIGH-TIDE LINE 2004-06

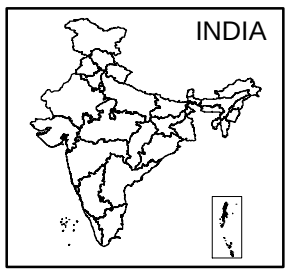
HIGH-TIDE LINE 1989-91

0 2

Scale in Km

INDEX TO SHEETS

88E12 SE	88E16 SW	88E16 SE
88F09 NE		88F13 NE
SEA	88F13 SW	88F13 SE



DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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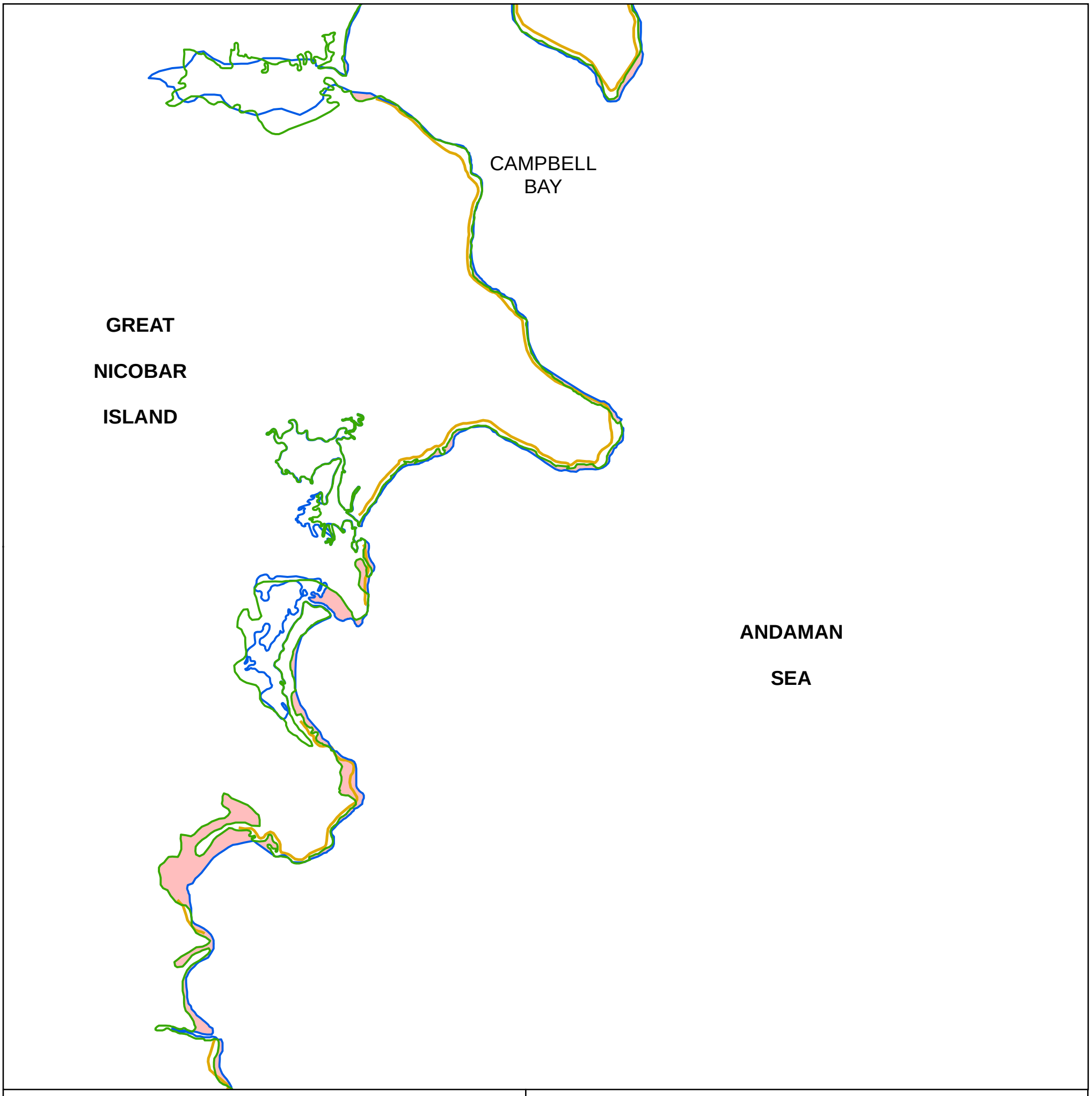
SHEET NO. 88F13NE



Legend

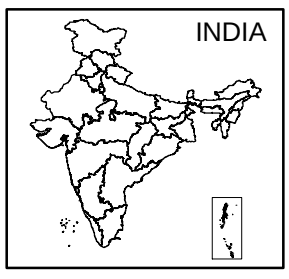
- EROSION
- ACCRETION
- HIGH-TIDE LINE 2004-06
- SEA WALL

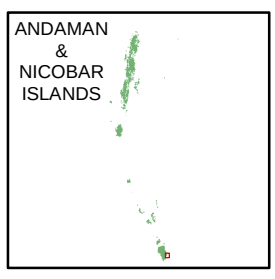
0 2

Scale in Km

INDEX TO SHEETS

88E16 SW	88E16 SE	SEA
88F13 NW		SEA
88F13 SW	88F13 SE	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

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SHEET NO. 88F13SW

NANCOWRY

NANJAPPA BAY

GREAT NICOBAR ISLAND

SOUTH BAY

MATA TARUWA BAY

Legend

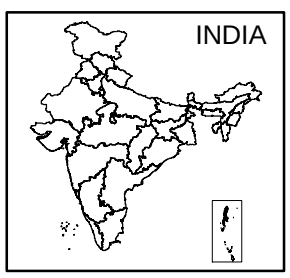
- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

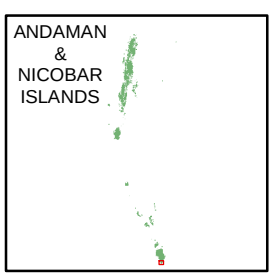
0 2

Scale in Km

INDEX TO SHEETS

88F09 NE	88F13 NW	88F13 NE
SEA		88F13 SE
SEA	88F14 NW	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

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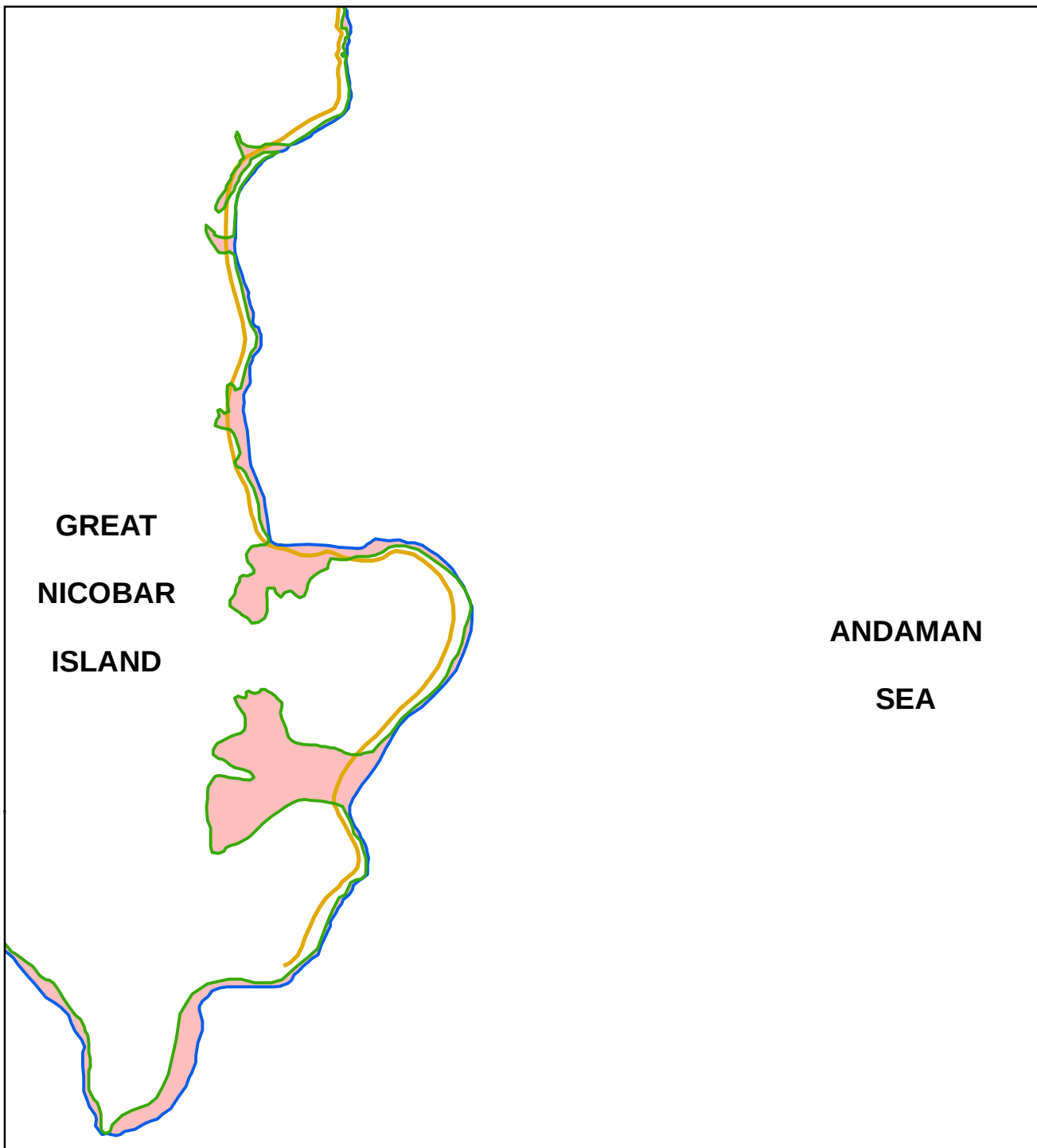
SHORELINE CHANGE MAP

ANDAMAN & NICOBAR ISLANDS

FOR OFFICIAL USE ONLY

SHEET NO. 88F13SE

NANCOWRY



Legend

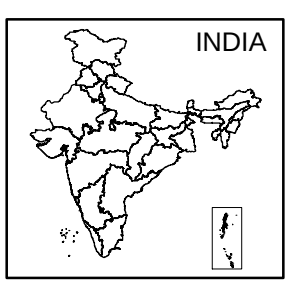
- EROSION
- HIGH-TIDE LINE 2004-06
- HIGH-TIDE LINE 1989-91
- SEA WALL

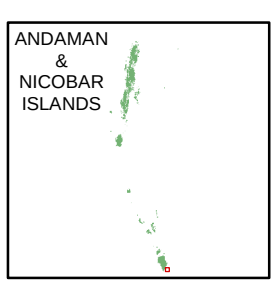
0 2

Scale in Km

INDEX TO SHEETS

88F13 NW	88F13 NE	SEA
88F13 SW		SEA
88F14 NW	SEA	SEA





DATA SOURCE:
SATELLITE IMAGES OF 1989-91 & 2004-06

PREPARED BY:
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Annexure-II

(Plates)

LAKSHADWEEP ISLANDS

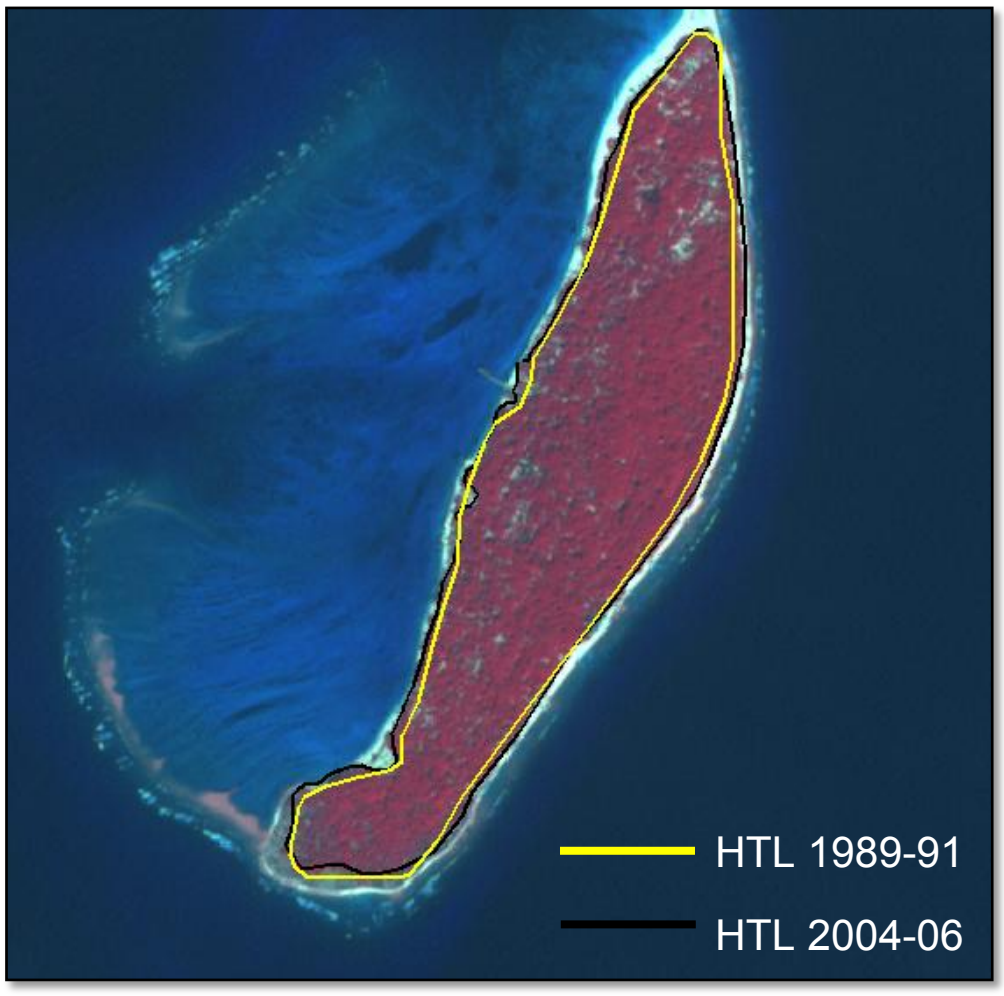

Plate No. 1: Erosion and accretion for Chetlath Island, map sheet no. 49A10NE (Image: LISS IV 2006).

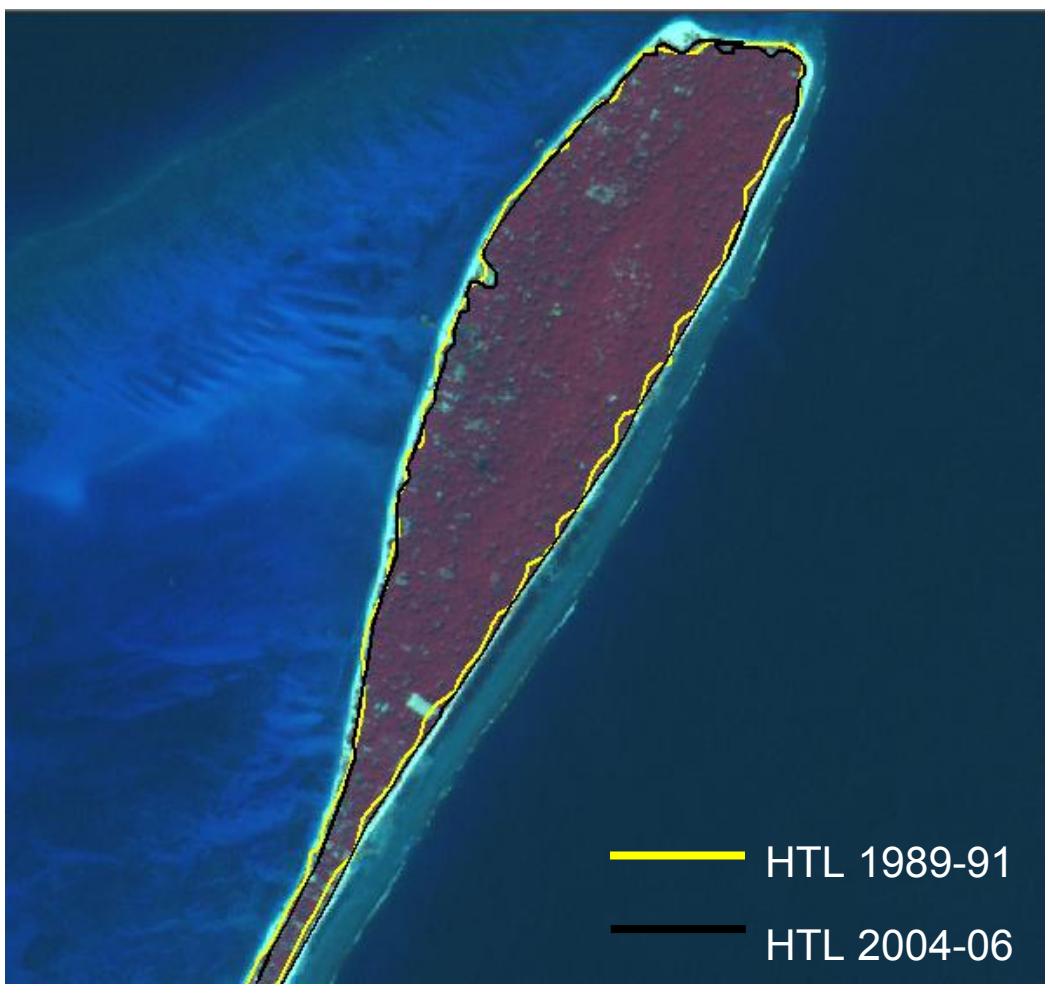

Plate No. 2: Erosion and accretion for north and central Agatti Island, map sheet no. 49B01NE & 49B01SE (Image: LISS IV 2006).

ANDAMAN & NICOBAR ISLANDS

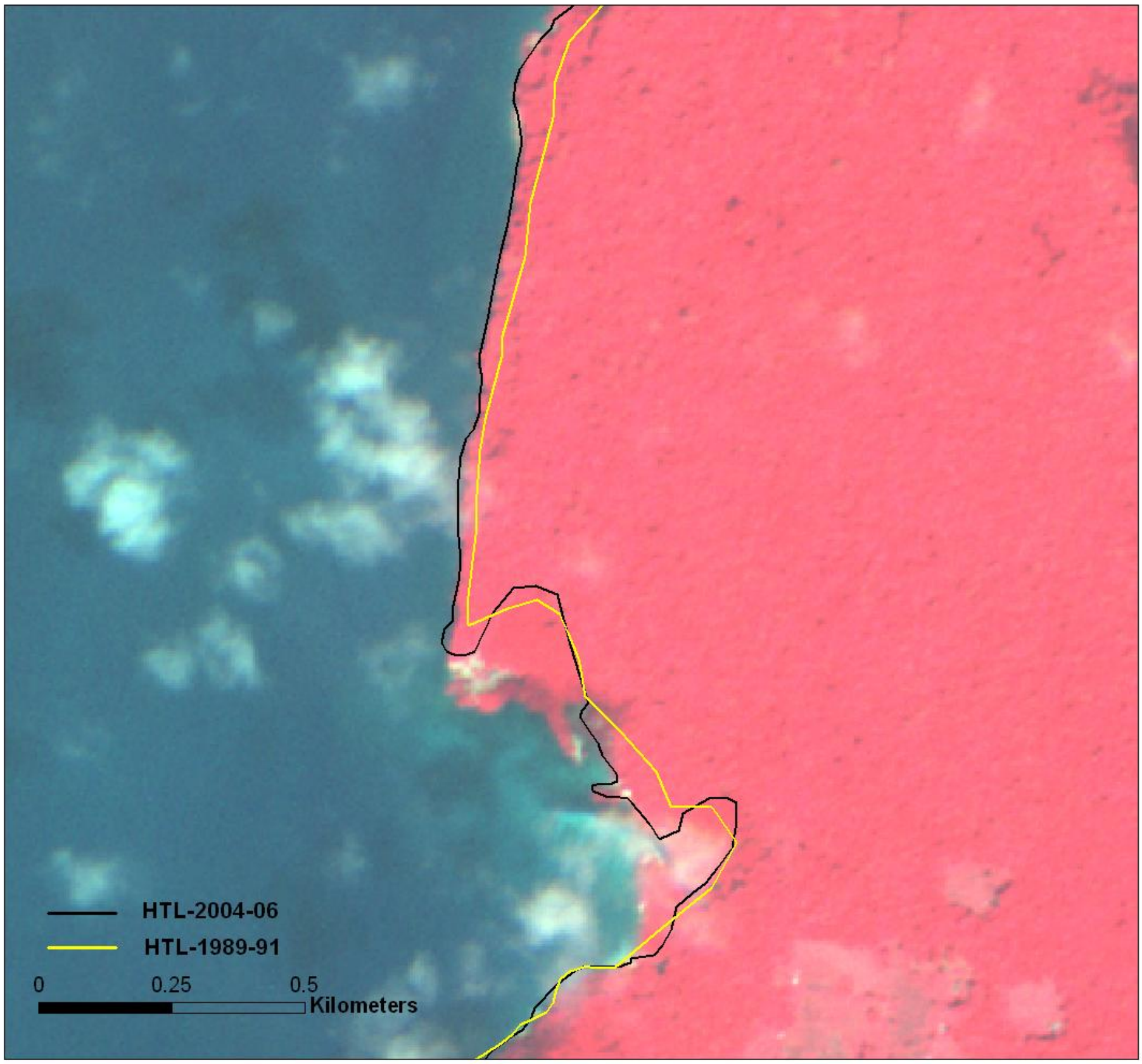

Plate No 3: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing the accreting areas along the western coast of Long Island (Map Sheet no. 86D15NE)

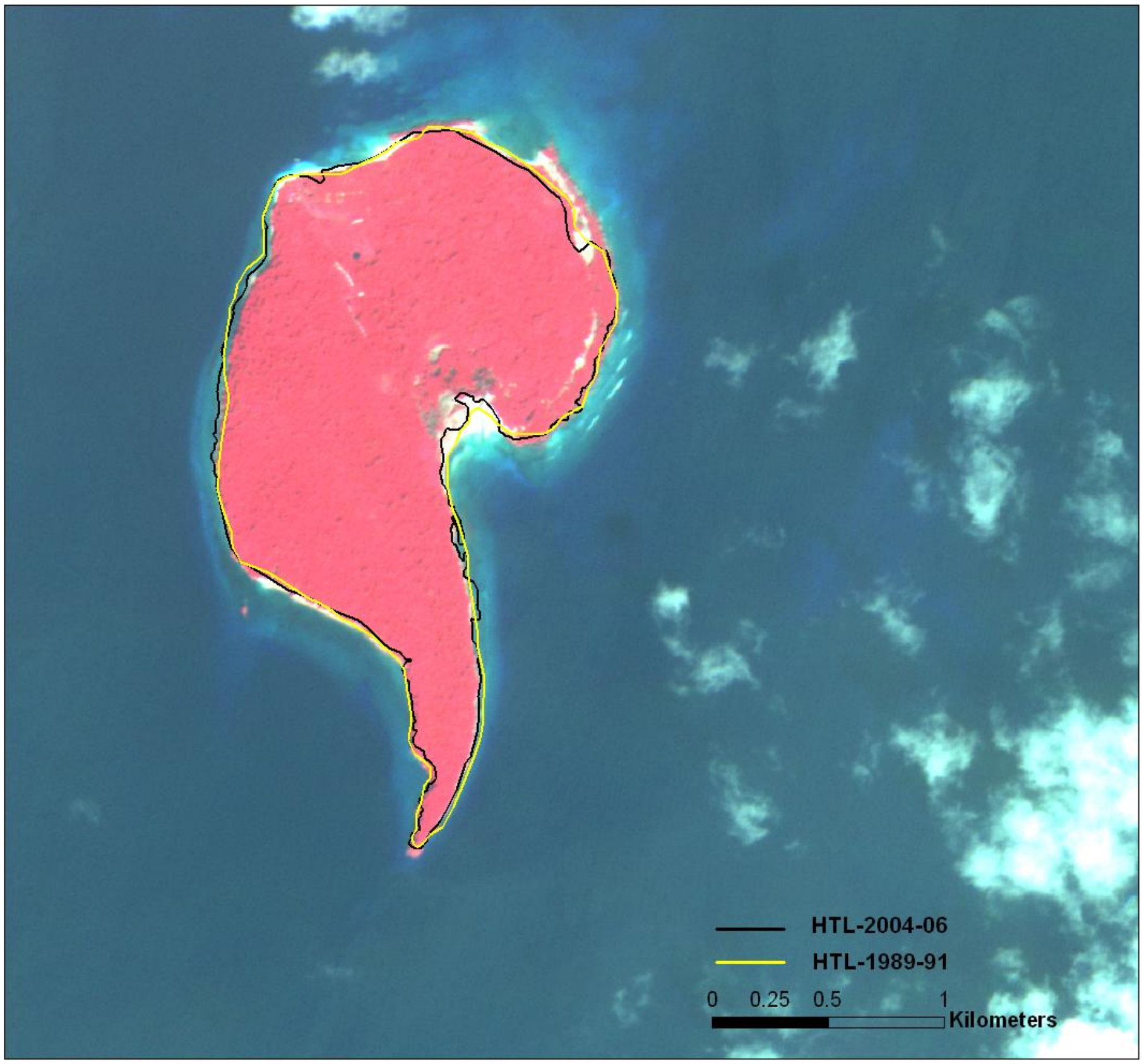

Plate No. 4: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing the coastal dynamics around Strait Islands (Map Sheet no. 86D16NE).

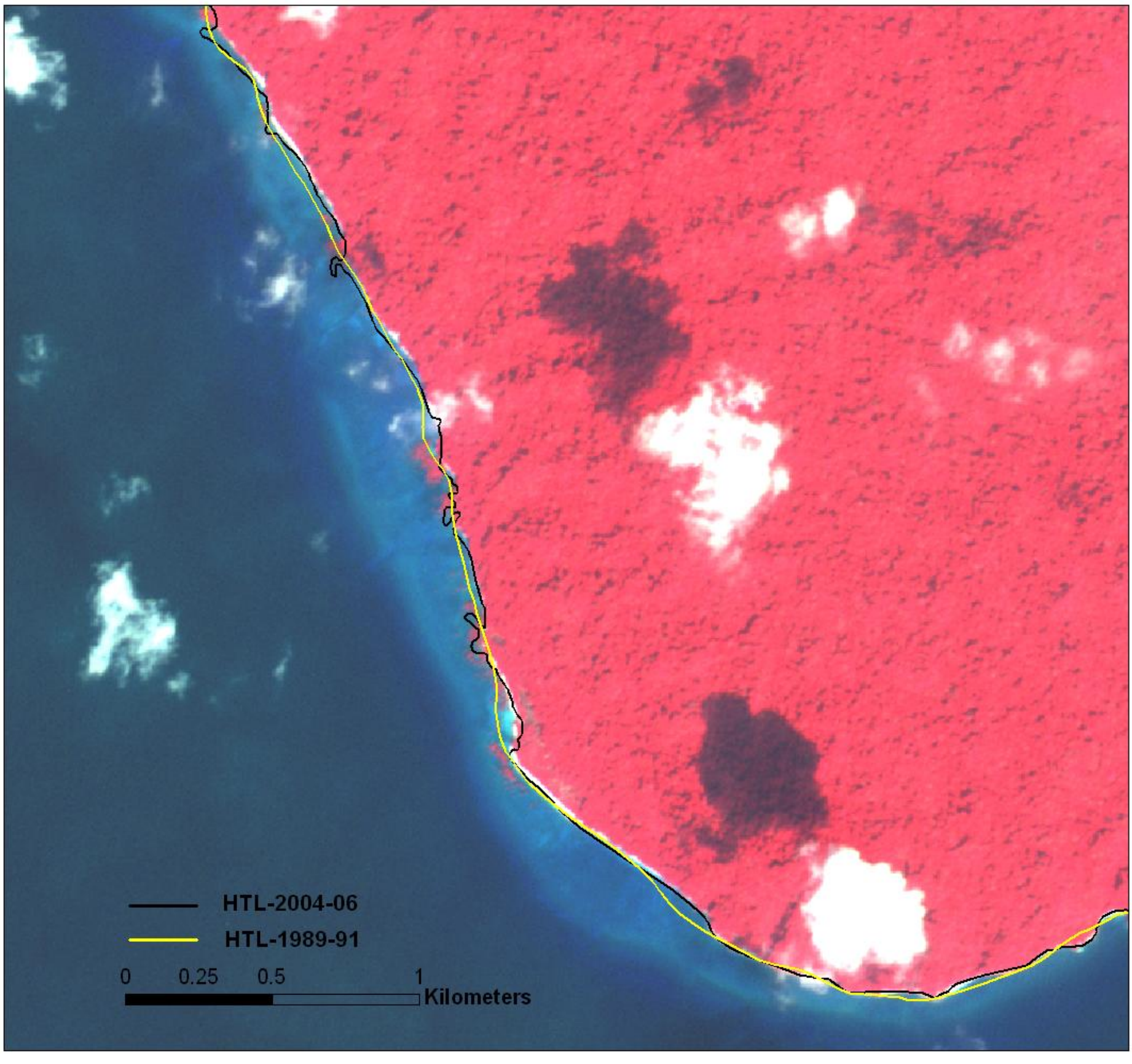

Plate No. 5: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing the eroding coast to the south of Havelock Island (Map Sheet no. 87E01NW).

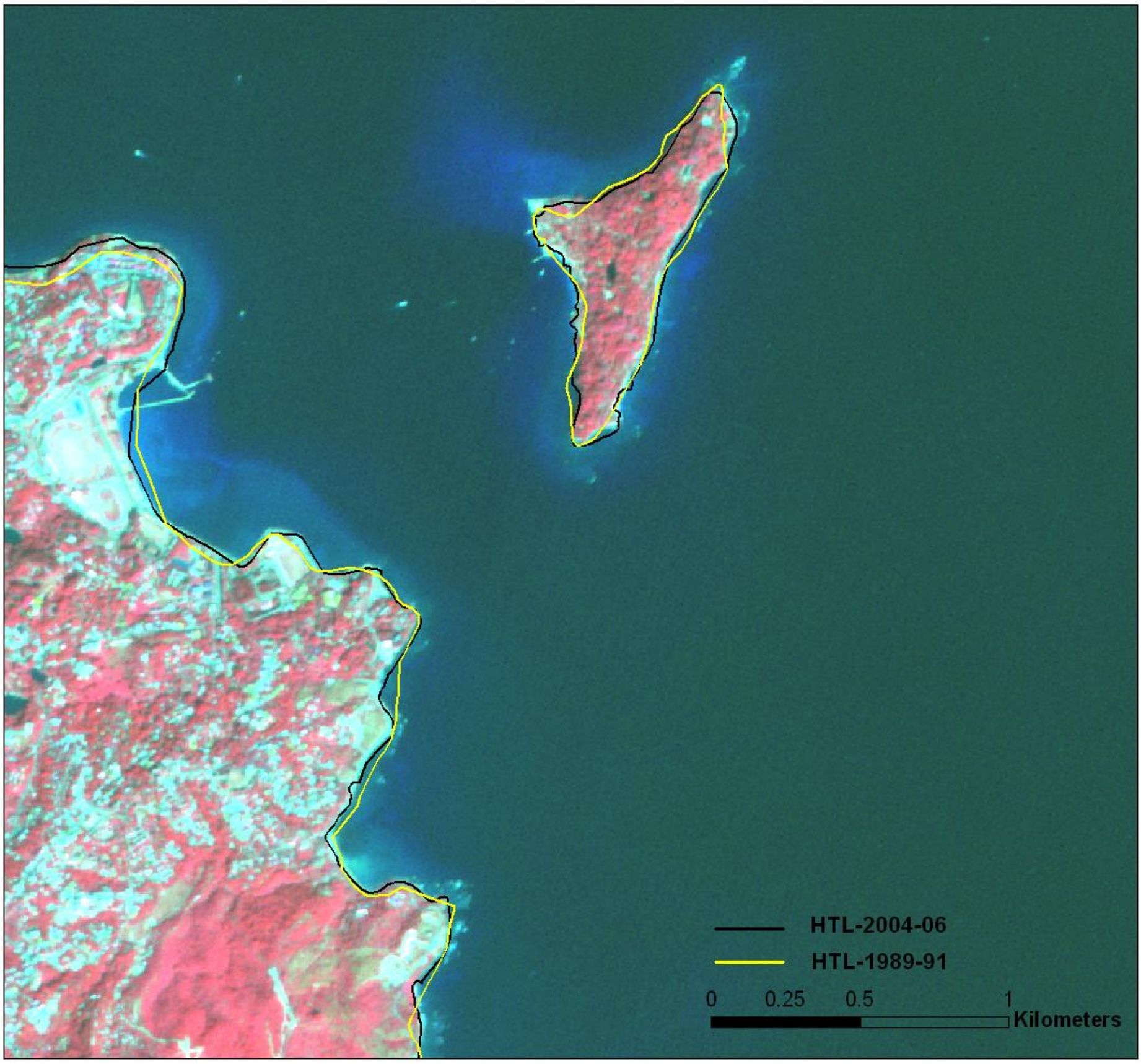

Plate No. 6: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing the coastal dynamics around Port Blair (Map Sheet no. 87A14NW).

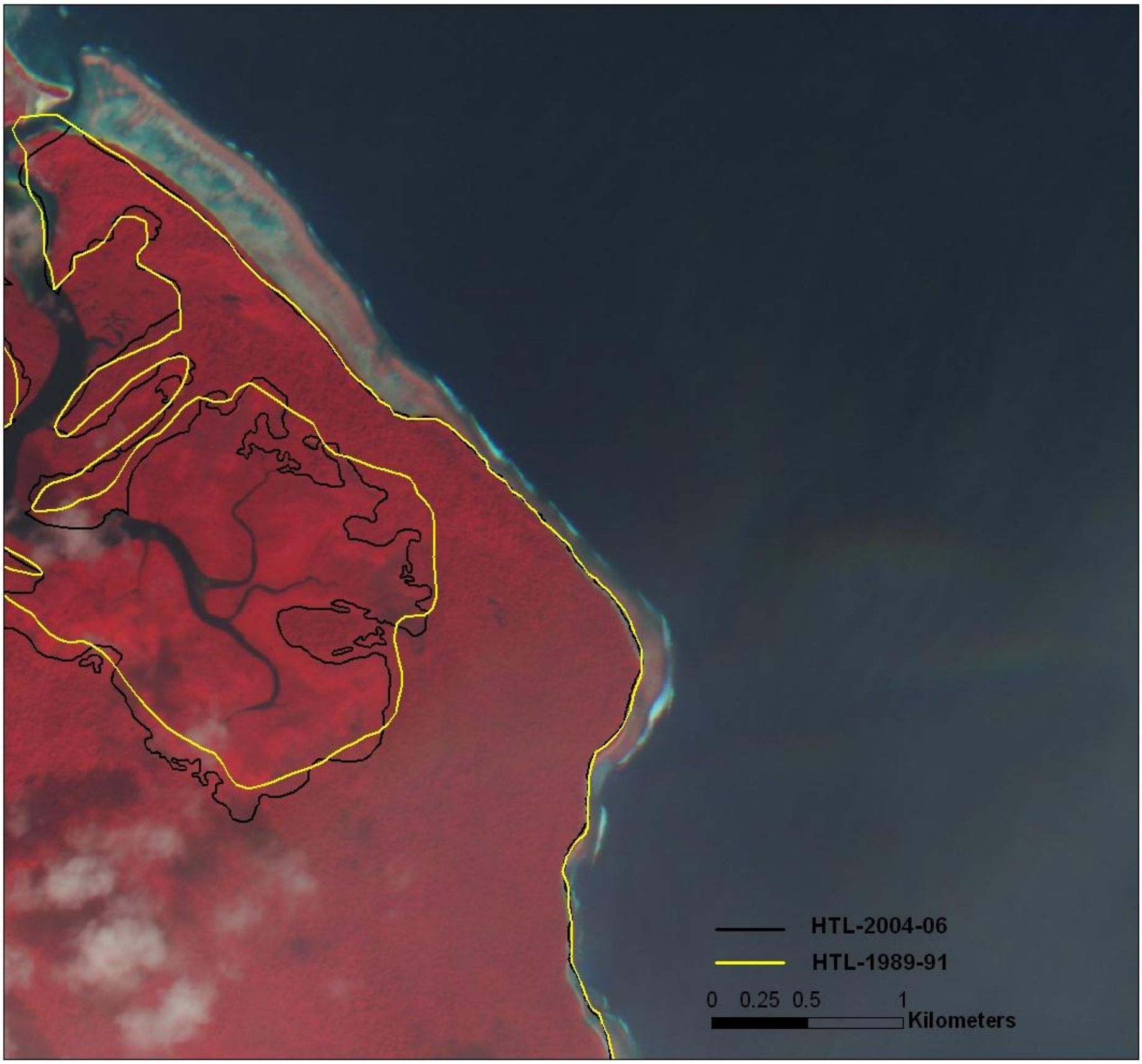

Plate No. 7: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing the coastal dynamics of the eastern coast along the South Andaman Island (Map sheet no. 87B09SW).

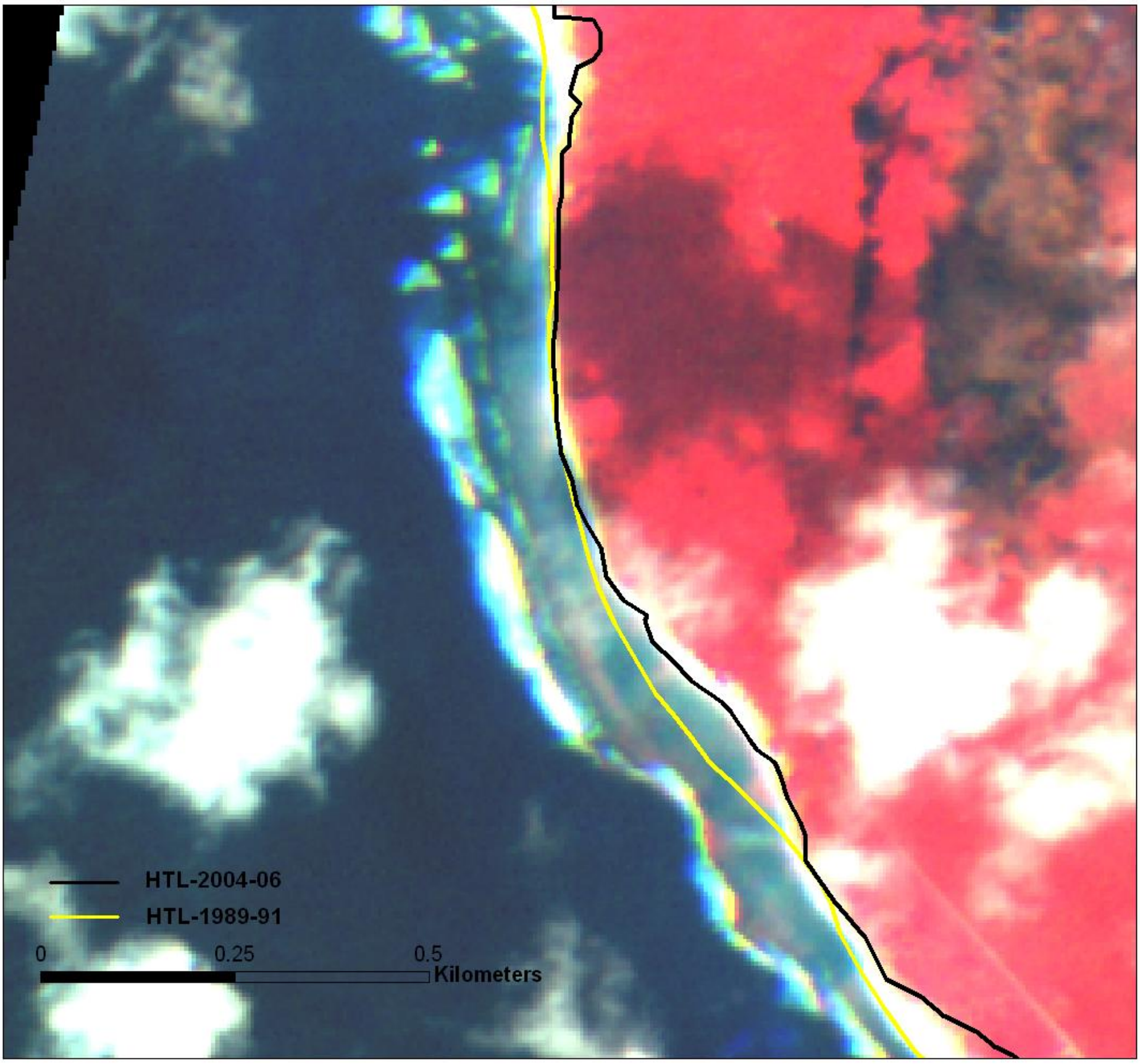

Plate No. 8: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing eroded coast to the west of Car-Nicobar Island (Map Sheet no. 87C12NE).

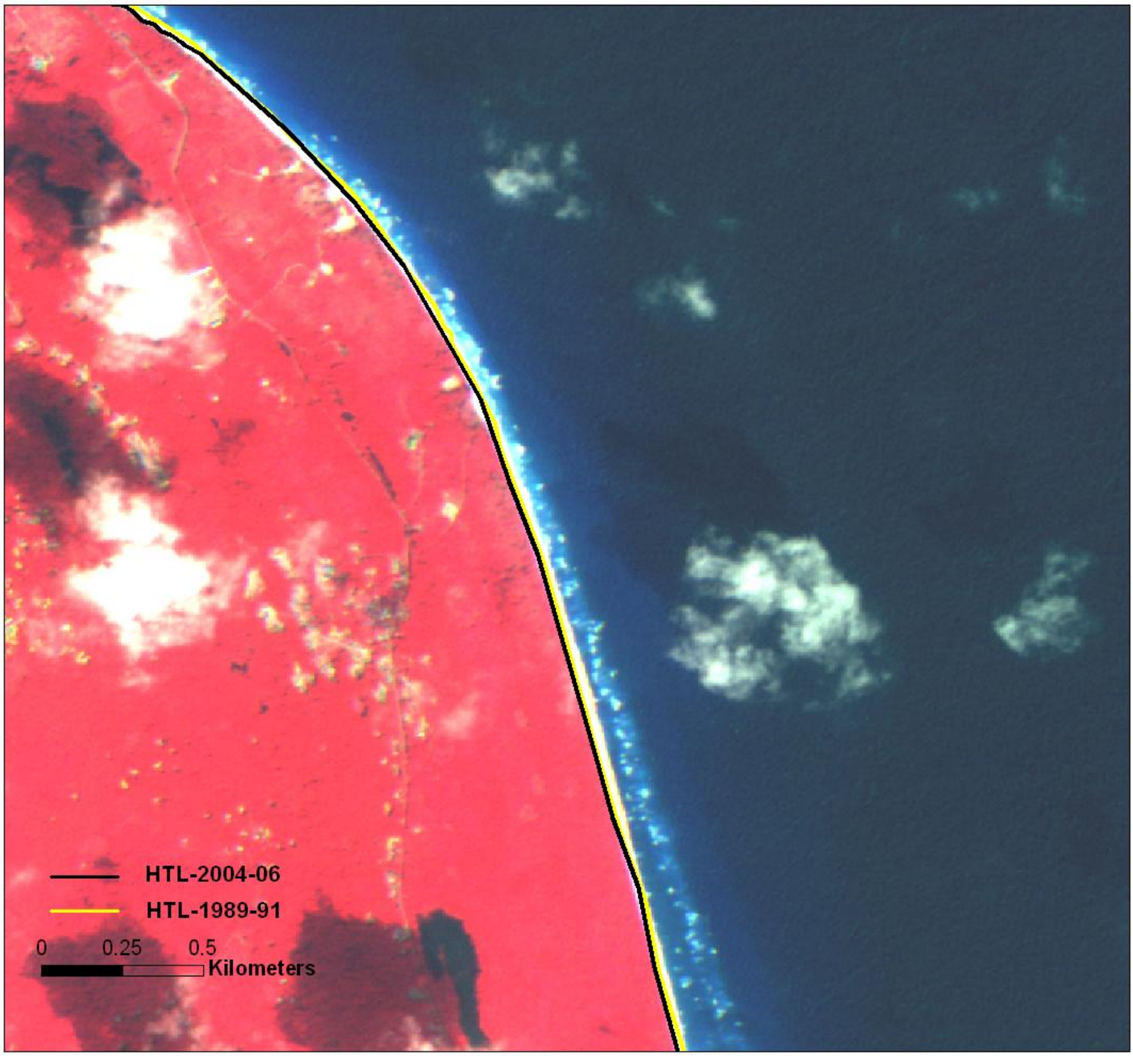

Plate No. 9: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing stable coast along the east coast of Car-Nicobar Islands (Map Sheet no. 87C16NW).

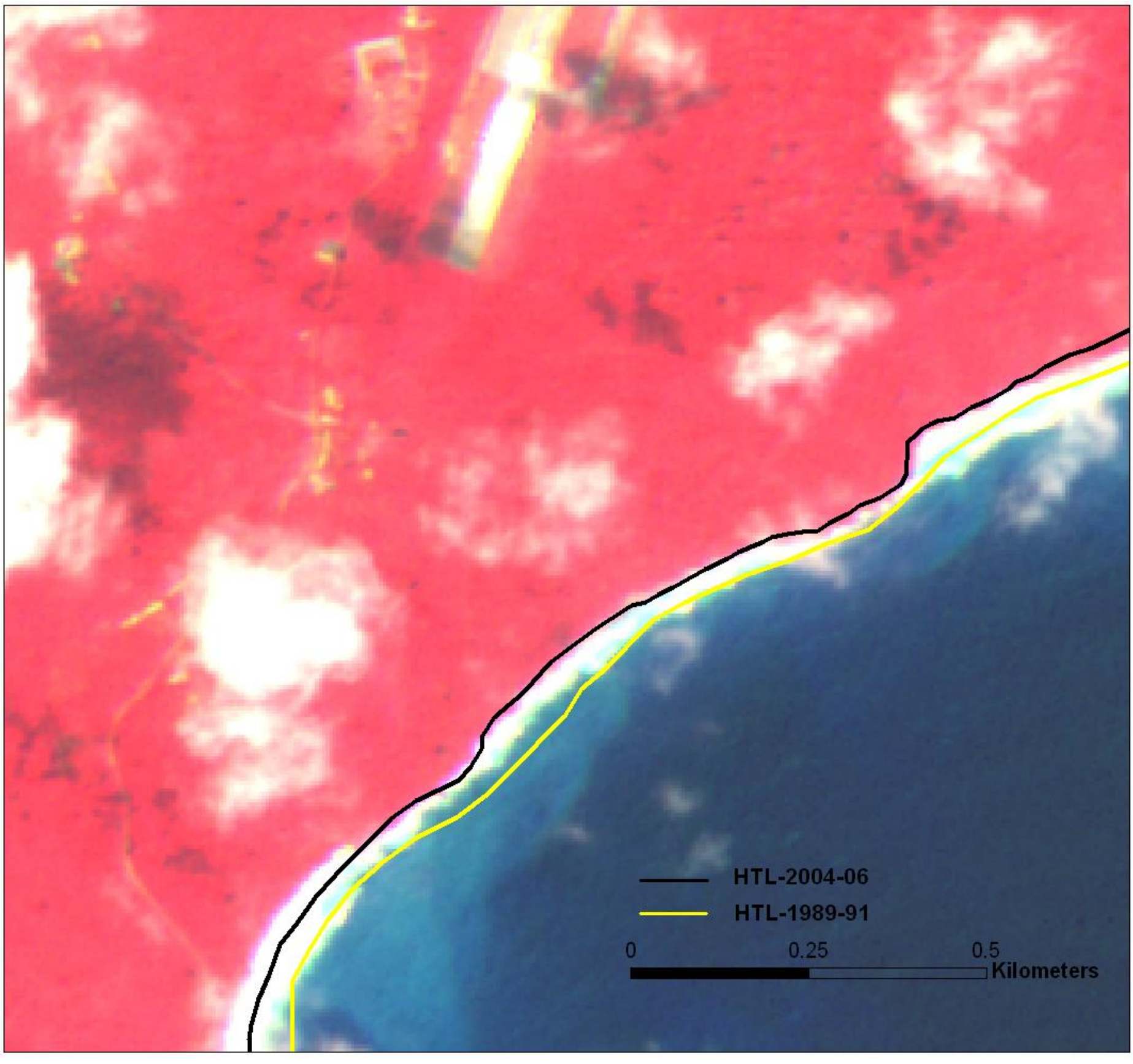

Plate No.10: 2011-12 LISS-IV image overlaid with high tide line of 2004-06 and 1989-91, showing eroded coast to the south of Car-Nicobar Island (Map Sheet no. 87C16NW).

Field Photographs

Plate No. 11: Beach Protection near Kavaratti Harbour, Lakshadweep

Plate No. 12: Hollow Block for protection near Puthiyapally, Kavaratti, Lakshadweep

Plate No. 13: Beach near Govt. house, North end, Kavaratti, Lakshadweep

Plate No. 14: Accretion near Boat jetty (West Side), Kavaratti, Lakshadweep

Plate No. 15: Erosion at Havelock island

Plate No. 16: Plantation near Havelock Port

Plate No. 17: Mangroves, Baratang Island

Annexure-III

(List of Data Used)

Table-4: Satellite data used for Lakshadweep Coast for (1999-2000 time-frame).

Sr. No.	Satellite	Sensor	Path	Row	Date
1	LANDSAT	ETM +	146	54	04-09-1999
2	LANDSAT	ETM +	146	53	04-09-1999
3	LANDSAT	ETM +	147	53	14-11-1999
4	LANDSAT	ETM +	147	52	05-03-2000

Table-5: Satellite data used for Andaman and Nicobar Coast (1989-91 time-frame).

Sr. No.	Map Sheet No.	Satellite	Sensor	Path	Row	Date
1	86C/12	IRS-1B	LISS-II	12	59	08-02-1992
2	86C/14	IRS-1B	LISS-II	12	59	03-01-1993
3	86C/15	IRS-1B	LISS-II	12	59	03-01-1993
4	86C/16	IRS-1B	LISS-II	12	56	03-01-1993
5	86D/09	IRS-1B	LISS-II	12	59	03-01-1993
6	86D/10	IRS-1B	LISS-II	12	60	03-01-1993
7	86D/11	IRS-1B	LISS-II	12	60	03-01-1993
8	86D/12	IRS-1B	LISS-II	12	60	03-01-1993
9	86D/13, 86H/01	IRS-1B	LISS-II	12	59	03-01-1993
10	86D/14	IRS-1B	LISS-II	12	60	03-01-1993
11	86D/15	IRS-1B	LISS-II	12	60	03-01-1993
12	86D/16	IRS-1B	LISS-II	12	60	03-01-1993
13	86G/02	IRS-1B	LISS-II	12	59	03-01-1993
14	86G/03	IRS-1B	LISS-II	12	57	03-01-1993
15	86G/04	IRS-1B	LISS-II	12	57	03-01-1993
16	86H/04	IRS-1B	LISS-II	12	60	03-01-1993
17	86H/04	IRS-1B	LISS-II	12	60	03-01-1994
18	86K/07, 86K/03	IRS-1B	LISS-II	11	59	09-03-1993
19	87A/02	IRS-1B	LISS-II	13	60	24-03-1992
20	87A/06	IRS-1B	LISS-II	12	60	23-03-1992
21	87A/09	IRS-1B	LISS-II	12	60	03-01-1993
22	87A/10	IRS-1B	LISS-II	12	60	03-01-1993
23	87A/11	IRS-1B	LISS-II	12	60	12-03-1992
24	87A/12	LANDSAT-5	MSS	134	52	27-02-1987
25	87A/13	IRS-1B	LISS-II	12	60	03-01-1993
26	87A/14	IRS-1B	LISS-II	12	60	03-01-1993

27	87B/01	IRS-1B	LISS-II	12	61	23-03-1992
28	87B/05	IRS-1B	LISS-II	12	61	23-03-1992
29	87B/06	LANDSAT-5	TM	134	53	31-03-1993
30	87B/09	IRS-1B	LISS-II	12	61	23-03-1992
31	87B/10	IRS-1B	LISS-II	12	61	23-03-1992
32	87C/16, 12 & 15	IRS-1B, LANDSAT-5	LISS-II, TM	12, 133	62,54	21-12-1993 , 15-02-1991
33	87E/01	IRS-1B	LISS-II	12	60	03-01-1993
34	87H/03	IRS-1B	LISS-II	11	63	15-02-1993
35	87H/04	IRS-1B	LISS-II	11	63	15-02-1993
36	87H/08	IRS-1B	LISS-II	11	63	15-02-1993
37	87H/10	IRS-1B	LISS-II	11	63	15-02-1993
38	87H/11	IRS-1B	LISS-II	11	63	15-02-1993
39	87H/12	IRS-1B	LISS-II	11	63	15-02-1993
40	88E/05	IRS-1B	LISS-II	11	63	15-02-1993
41	88E/09	IRS-1B	LISS-II	11	63	15-02-1993
42	88E/10	LANDSAT-5	TM	133	55	02-03-1992
43	88E/11	LANDSAT-5	TM	133	55	05-03-1992
44	88E/12	LANDSAT-5	TM	133	55	05-03-1992
45	88E/15	LANDSAT-5	TM	132	55	05-04-1994
46	88E/16	LANDSAT-5	TM	132	55	05-04-1994
47	88F/13 & 88F/09	LANDSAT-5	TM	132, 133	55	05-04-1994 , 05-03-1992

Table-6: Satellite data used for Lakshadweep Coast (2004-06 time-frame).

Sr.No	Map number	Satellite	Sensor	Orbit	Scene no.	Date
1	49A02SE 49A03NE	IRS P6	LISS IV	6537	125	19-01-2005
2	49A10NE	IRS P6	LISS IV	11723	136	19-01-2006
3	49A15SW 49A16NW 49A12NE 49A12SE	IRS P6	LISS IV	1152	148	06-01-2004
4	49A15NE 49E03NW	IRS P6	LISS IV	6608	57	24-01-2005
5	49B01SE	IRS P6	LISS IV	2445	146	06-04-2004
6	49B05NW	IRS P6	LISS IV	6665	123	28-01-2005
7	49B10SE	IRS P6	LISS IV	7077	24	26-02-2005

8	49F09SE	IRS P6	LISS IV	8796	130	27-06-2005
9	49F12NE 49F12SE	IRS P6	LISS IV	1223	153	11-01-2004
10	49H03SW	IRS P6	LISS IV	11311	144	21-12-2005

Table-7: Satellite data used for Andaman and Nicobar Coast (2004-06 time-frame).

SR. NO.	MAP NUMBER	SATELLITE	SENSOR	ORBIT	SCENE NO.	DATE
1	86C/12SE	IRS P6	LISS IV	6735	98	2/2/2005
2	86C/14NE	IRS 1D	LISS III	115	64	22-02-2006
3	86C/14SE	IRS 1D	LISS III	114	64	25-02-2007
4	86C/14SW	IRS 1D	LISS III	114	64	25-02-2007
5	86C/15NE	IRS 1D	LISS III	114	64	25-02-2007
6	86C/15NW	IRS 1D	LISS III	115	64	19-03-2006
7	86C/15SE	IRS P6	LISS IV	6735, 6863	97, 77	02-02-2005, 11-02-2005
8	86C/15SW	IRS P6	LISS IV	6664	75	28-01-2005
9	86C/16 NE	IRS P6	LISS IV	6735, 6863	97, 77	02-02-2005, 11-02-2005
10	86C/16SE	IRS P6	LISS IV	6863	78	11/2/2005
11	86C/16SW	IRS P6	LISS IV	6735	98	2/2/2005
12	86D/09SE	IRS 1D	LISS III	115	64	19-03-2006
13	86D/10NE	IRS P6	LISS IV	6735	100	2/2/2005
14	86D/11NE	IRS P6	LISS IV	6664	79	28-01-2005
15	86D/11SE	IRS P6	LISS III	114	65	6/2/2006
16	86D/12NE	IRS P6	LISS IV	6664, 6863	80, 82	28-01-2005, 11-02-2005
17	86D/12SE	IRS P6	LISS IV	6735	102	2/2/2005
18	86D/12SW	IRS P6	LISS IV	6735	102	2/2/2005
19	86D/13NE	IRS 1D	LISS III	115	64	22-02-2006
20	86D/13NW	IRS P6	LISS IV	6664, 6735	77, 96	28-01-2005, 02-02-2005

21	86D/13SE	IRS P6	LISS IV	6863	78	11/2/2005
22	86D/13SW	IRS P6	LISS IV	6664	77	28-01-2005
23	86D/14NE	IRS P6	LISS IV	6863	79, 80	11/2/2005
24	86D/14NW	IRS P6	LISS IV	6735	100	2/2/2005
25	86D/14SE	IRS P6	LISS IV	6863	80	11/2/2005
26	86D/15NE	IRS P6	LISS IV	6863	80, 81	11/2/2005
27	86D/15SE	IRS P6	LISS IV	6863	81	11/2/2005
28	86D/15NW	IRS P6	LISS IV	6863	81	11/2/2005
29	86D/16NE	IRS P6	LISS IV	6863	82	11/2/2005
30	86D/16NW	IRS P6	LISS IV	6863	82	11/2/2005
31	86D/16SE	IRS P6	LISS IV	6863	83	11/2/2005
32	86D/16SW	IRS P6	LISS IV	6863	82	11/2/2005
33	86D/09NE	IRS P6	LISS IV	6735	98	2/2/2005
34	86G/02SW	IRS P6	LISS IV	6863	76	11/2/2005
35	86G/03NW	IRS P6	LISS IV	6863	76	11/2/2005
36	86G/03SW	IRS P6	LISS IV	6863	77	11/2/2005
37	86G/04NW	IRS P6	LISS IV	6863	77	11/2/2005
38	86H/01NW	IRS 1D	LISS III	115	64	22-02-2006
39	86H/03SW	IRS 1D	LISS III	115	64	22-02-2006
40	86H/04NE	IRS 1D	LISS III	115	64	22-02-2006
41	86H/04NW	IRS 1D	LISS III	115	64	22-02-2006
42	86H/04SW	IRS 1D	LISS III	115	64	22-02-2006
43	87A/10NE	IRS P6	LISS III	114	65	6/2/2006
44	87A/10NW	IRS P6	LISS IV	6863	85	11/2/2005
45	87A/10SE	IRS P6	LISS III	114	65	6/2/2006
46	87A/10SW	IRS P6	LISS III	114	65	6/2/2006
47	87A/11NE	IRS P6	LISS IV	6863	85	11/2/2005
48	87A/11NW	IRS P6	LISS IV	6863	86	11/2/2005
49	87A/11SE	IRS P6	LISS IV	6792	121	6/2/2005
50	87A/11SW	IRS P6	LISS IV	6863	86	11/2/2005

51	87A/12NE	IRS 1D	LISS III	115	66	12/2/2005
52	87A/13NE	IRS 1D	LISS III	115	65	12/2/2005
53	87A/13NW	IRS P6	LISS IV	6863	83	11/2/2005
54	87A/13SW	IRS P6	LISS IV	6863	83	11/2/2005
55	87A/14NW	IRS P6	LISS IV	6863	84	11/2/2005
56	87A/02SE	IRS 1D	LISS III	115	65	19-03-2006
57	87A/06SW	IRS 1D	LISS III	115	64	19-03-2006
58	87A/09NE	IRS 1D	LISS III	115	65	22-02-2006
59	87A/09NW	IRS P6	LISS IV	6735	103	2/2/2005
60	87A/09 SE	IRS P6	LISS III	114	65	6/2/2006
61	87B/10NW	IRS P6	LISS IV	6863	89	11/2/2005
62	87B/10SW	IRS P6	LISS IV	6863	89, 90	11/2/2005
63	87B/01NE	IRS P6	LISS IV	6735	107	2/2/2005
64	87B/05NE	IRS P6	LISS IV	6792	123	6/2/2005
65	87B/05SE	IRS P6	LISS IV	6735	108	2/2/2005
66	87B/06NE	IRS P6	LISS IV	6863	89	11/2/2005
67	87B/06SE	IRS P6	LISS IV	6863	89, 90	11/2/2005
68	87B/09NE	IRS P6	LISS IV	6863	87	11/2/2005
69	87B/09NW	IRS P6	LISS IV	6863	88	11/2/2005
70	87B/09SW	IRS P6	LISS IV	6792	123	6/2/2005
71	87E/01NW	IRS 1D	LISS III	115	65	22-02-2006
72	87E/01SW	IRS 1D	LISS III	115	65	22-02-2006
73	87C/12NE	IRS P6	LISS IV	6721	130	1/2/2005
74	87C/15SW	IRS P6	LISS IV	6721	129	1/2/2005
75	87C/16NW	IRS P6	LISS IV	6721	130	1/2/2005
76	87C/16SW	IRS P6	LISS IV	6721	130	1/2/2005
77	87H/10SE	IRS 1D	LISS III	117	68	13-03-2006
78	87H/10SW	IRS P6	LISS III	116	68	28-01-2005
79	87H/11NE	IRS P6	LISS IV	6536	75	19-01-2006
80	87H/11NW	IRS P6	LISS IV	6536	75	19-01-2006

81	87H/04NE	IRS 1D	LISS III	116	68	30-05-2006
82	87H/08NE	IRS P6	LISS III	116	68	13-08-2004
83	87H/08SW	IRS 1D	LISS III	117	68	13-03-2006
84	88E/16NE	IRS P6	LISS IV	5712	112	22-11-2004
85	88E/16NW	IRS P6	LISS IV	5712	112	22-11-2004
86	88E/16SE	IRS P6	LISS IV	5712, 7829	112, 93	22-11-2004, 20-04-2005
87	88F13NE	IRS P6	LISS IV	5712	113, 114	22-11-2004
88	88F13NW	IRS P6	LISS IV	5712	113, 114	22-11-2004
89	88F13SE	IRS P6	LISS IV	5712	113, 114	22-11-2004
90	88F13SW	IRS P6	LISS IV	5712	113, 114	22-11-2004

Table-8: Protection measures implemented in Lakshadweep

Location	Type of protection work	Specification	Latitude/longitude
KAVARATTI	Sea wall	10.05 km, Tetrapod	Between 10° 32' and 10° 35' N latitude, Between 72° 35' and 72° 40' E longitude
AGATTI	Sea wall	10.80 km, Tetrapod	Between 10° 48' and 10° 53' N latitude, Between 72° 09' and 72° 13' E longitude
AMINI	Sea wall	8.13 km, Tetrapod	Between 11° 06' and 11° 08' N latitude, Between 72° 42' and 72° 45' E longitude
ANDROTH	Sea wall	7.96 km, Tetrapod	Between 10° 48' and 10° 50' N latitude, Between 73° 38' and 73° 42' E longitude
BITRA	Sea wall	0.80 km, Tetrapod	11° 36' N latitude and 72° 11' E longitude
CHETLATH	Sea wall	5.6 km, Tetrapod	Between 11° 41' and 11° 43' N latitude, Between 72° 41' and 72° 43' E longitude

KADMATH	Sea wall	7.86 km, Tetrapod	Between 11° 10' and 11° 16' N latitude, Between 72° 45' and 72° 48' E longitude
KALPENI	Sea wall	7.2 km, Tetrapod	Between 10° 03' and 10° 07' N latitude, Between 73° 37' and 73° 39' E longitude
KILTAN	Sea wall	4.56 km, Tetrapod	Between 11° 28' and 11° 30' N latitude, Between 72° 59' and 73° 01' E longitude
MINICOY	Sea wall	6 km, Tetrapod	Between 8° 15' and 8° 20' N latitude, Between 73° 01' and 73° 05' E longitude

Table-9: The length of the vulnerable reaches of the 10 major islands of Lakshadweep listed by Central Water Commission

Sr. No.	Vulnerable reaches	Length (in km)
1	Kavaratti	4.67
2	Agatti	7.5
3	Amini	5.32
4	Androth	8.56
5	Bitra	1.7
6	Chetlath	1.6
7	Kadmath	17.28
8	Kalpeni	5.9
9	Kiltan	3.64
10	Minicoy	13.91

Table-10: Protection measures (Sea Wall) implemented in Andaman and Nicobar Islands

Sr. No	Village Name	Island Group	LENGTH (in m)	Starting Point Latitude & Longitude	Ending Point Latitude &Longitude
1	Great Nicobar	Great Nicobar	375	93°50'28.576"E 6°46'19.289"N	93°50'20.741"E 6°46'9.403"N
2	Shastri Nagar	Great Nicobar	300	93°54'6.324"E 6°48'39.512"N	93°53'59.736"E 6°48'32.917"N
3	Gandhi Nagar	Great Nicobar	68	93°54'11.828"E 6°49'12.496"N	93°54'10.141"E 6°49'11.06"N
4	Gandhi Nagar	Great Nicobar	114	93°54'18.929"E 6°49'22.238"N	93°54'17.511"E 6°49'18.831"N
5	Vijay Nagar	Great Nicobar	434	93°54'30.911"E 6°55'39.581"N	93°54'32.455"E 6°55'25.796"N
6	Johinder Nagar	Great Nicobar	80	93°56'38.425"E 6°57'7.618"N	93°56'37"E 6°57'5.464"N
7	Johinder Nagar	Great Nicobar	120	93°56'36.323"E 6°57'29.434"N	93°56'32.532"E 6°57'29.88"N
8	Johinder Nagar	Great Nicobar	58	93°56'25.9"E 6°57'33.452"N	93°56'27.539"E 6°57'32.509"N
9	Johinder Nagar	Great Nicobar	13	93°56'17.797"E 6°57'36.653"N	93°56'18.116"E 6°57'36.378"N
10	Johinder Nagar	Great Nicobar	105	93°55'56.154"E 6°58'9.03"N	93°55'57.057"E 6°58'5.743"N
11	Campellbay	Great Nicobar	157	93°55'52.202"E 7°0'15.083"N	93°55'54.384"E 7°0'10.494"N
12	Campellbay	Great Nicobar	110	93°55'50.337"E 7°0'18.419"N	93°55'52.091"E 7°0'15.3"N
13	Campellbay	Great Nicobar	45	93°55'50.185"E 7°0'21.879"N	93°55'50.565"E 7°0'20.514"N
14	Campellbay	Great Nicobar	100	93°55'47.511"E 7°0'26.957"N	93°55'49.198"E 7°0'24.276"N
15	Katchal Island	Katchal Island	100	93°23'47.014"E 7°59'16.919"N	93°23'47.666"E 7°59'13.759"N
16	Katchal Island	Katchal Island	100	93°23'52.48"E 8°0'1.33"N	93°23'51.197"E 7°59'58.345"N
17	Katchal Island	Katchal Island	150	93°29'57.335"E 8°1'32.028"N	93°29'56.642"E 8°1'27.304"N
18	Nancowry island	Nancowry island	150	93°31'23.874"E 8°0'59.853"N	93°31'25.4"E 8°0'55.266"N
19	Nancowry island	Nancowry island	150	93°34'19.045"E 7°59'50.754"N	93°34'21.917"E 7°59'46.852"N
20	Nancowry island	Nancowry island	300	93°32'33.326"E 8°1'36.352"N	93°32'42.643"E 8°1'35.131"N
21	Nancowry island	Nancowry island	265	93°32'49.78"E 8°1'34.442"N	93°32'56.37"E 8°1'30.284"N
22	Kamorta Island	Kamorta	150	93°32'19.094"E	93°32'23.518"E

		Island		8°2'11.959"N	8°2'12.479"N
23	Kamorta Island	Kamorta Island	160	93°32'18.496"E 8°5'24.384"N	93°32'23.487"E 8°5'23.069"N
24	Trinket Island	Trinket Island	200	93°35'2.898"E 8°4'16.124"N	93°35'2.06"E 8°4'6.513"N
25	Kamorta Island	Kamorta Island	230	93°27'40.704"E 8°6'16.482"N	93°27'43.396"E 8°6'9.537"N
26	Kamorta Island	Kamorta Island	1000	93°31'27.616"E 8°10'55.47"N	93°31'5.47"E 8°10'33.732"N
27	Car Nicobar Island	Car Nicobar Island	500	92°45'9.111"E 9°12'55.295"N	92°45'25.071"E 9°12'58.047"N
28	Car Nicobar Island	Car Nicobar Island	500	92°45'30.647"E 9°12'57.843"N	92°45'45.567"E 9°12'55.319"N
29	Car Nicobar Island	Car Nicobar Island	750	92°43'40.616"E 9°13'11.987"N	92°44'3.239"E 9°13'4.276"N
30	Car Nicobar Island	Car Nicobar Island	750	92°43'17.257"E 9°10'44.212"N	92°43'16.13"E 9°10'19.935"N
31	Car Nicobar Island	Car Nicobar Island	700	92°46'6.606"E 9°7'45.89"N	92°46'24.906"E 9°7'33.783"N
32	Car Nicobar Island	Car Nicobar Island	700	92°48'40.291"E 9°7'45.628"N	92°48'29.214"E 9°7'29.661"N
33	Car Nicobar Island	Car Nicobar Island	800	92°49'5.42"E 9°8'13.269"N	92°48'44.559"E 9°7'58.566"N
34	Car Nicobar Island	Car Nicobar Island	500	92°48'44.559"E 9°7'58.566"N	92°49'46.731"E 9°9'26.473"N
35	Car Nicobar Island	Car Nicobar Island	500	92°49'50.022"E 9°10'7.956"N	92°49'51.934"E 9°9'52.463"N
36	Car Nicobar Island	Car Nicobar Island	500	92°49'37.333"E 9°10'39.316"N	92°49'43.469"E 9°10'25.051"N
37	Car Nicobar Island	Car Nicobar Island	350	92°49'27.748"E 9°11'36.349"N	92°49'30.625"E 9°11'25.396"N
38	Car Nicobar Island	Car Nicobar Island	300	92°49'14.334"E 9°12'23.034"N	92°49'17.249"E 9°12'13.72"N
39	Car Nicobar Island	Car Nicobar Island	600	92°48'50.664"E 9°13'11.796"N	92°49'1.814"E 9°12'55.82"N
40	Car Nicobar Island	Car Nicobar Island	750	92°47'49.44"E 9°14'7.442"N	92°48'5.2"E 9°13'49.062"N
41	Car Nicobar Island	Car Nicobar Island	500	92°47'7.37"E 9°14'47.145"N	92°47'18.622"E 9°14'36.145"N
42	Car Nicobar Island	Car Nicobar Island	200	92°46'45.253"E 9°15'12.768"N	92°46'48.693"E 9°15'7.432"N
43	Car Nicobar Island	Car Nicobar Island	200	92°46'29.337"E 9°15'19.34"N	92°46'31.265"E 9°15'13.294"N
44	Hut Bay	Little Andaman	693	92°33'42.317"E 10°35'17.308"N	92°33'58.014"E 10°35'26.459"N
45	Hut Bay	Little Andaman	600	92°34'0.184"E 10°35'13.658"N	92°34'15.297"E 10°35'1.247"N
46	Hut Bay	Little Andaman	600	92°34'15.842"E 10°35'0.729"N	92°34'23.164"E 10°34'44.572"N

47	Chidiyatapu	South Andaman	204	92°42'33.861"E 11°29'1.134"N	92°42'35.096"E 11°28'55.462"N
48	Rangachang	South Andaman	160	92°44'38.109"E 11°34'49.472"N	92°44'37.496"E 11°34'44.457"N
49	Brookshabad	South Andaman	700	92°44'57.5"E 11°38'37.659"N	92°45'0.521"E 11°38'22.482"N
50	Chidiyatapu	South Andaman	240	92°43'28.34"E 11°30'34.583"N	92°43'25.05"E 11°30'27.845"N
51	New Rangachang	South Andaman	60	92°43'40.646"E 11°32'1.645"N	92°43'39.641"E 11°32'0.042"N
52	Rangachang	South Andaman	810	92°44'27.293"E 11°34'12.387"N	92°44'9.557"E 11°33'54.524"N
53	Wandoor	South Andaman	300	92°36'52.032"E 11°35'25.287"N	92°36'58.504"E 11°35'17.931"N
54	Chouldhari	South Andaman	150	92°38'48.502"E 11°38'5.643"N	92°38'49.261"E 11°38'0.877"N
55	Sippighat	South Andaman	800	92°41'36.206"E 11°36'24.223"N	92°41'18.939"E 11°36'8.531"N
56	Sippighat	South Andaman	1500	92°41'49.301"E 11°36'49.666"N	92°41'23.745"E 11°36'20.618"N
57	Muslim Basthi	South Andaman	925	92°40'13.026"E 11°39'12.958"N	92°40'3.862"E 11°38'58.211"N
58	Havelock	Havelock Island, South Andaman	100	93°3'11.514"E 11°54'14.164"N	93°3'14.037"E 11°54'13.045"N
59	Havelock	Havelock Island, South Andaman	120	93°1'45.674"E 11°57'0.925"N	93°1'49.224"E 11°56'59.324"N
60	Vijaynagar	Havelock Island, South Andaman	150	93°1'35.559"E 11°57'53.832"N	93°1'36.876"E 11°57'49.236"N
61	Vijaynagar	Havelock Island, South Andaman	30	93°0'56.629"E 11°59'7.414"N	93°0'56.887"E 11°59'6.477"N
62	Vijaynagar	Havelock Island, South Andaman	95	93°0'31.394"E 12°0'12.722"N	93°0'30.635"E 12°0'10.19"N
63	Vijaynagar	Havelock Island, South Andaman	54	93°0'39.39"E 12°1'5.607"N	93°0'39.967"E 12°1'4.008"N
64	Govinda Nagar	Havelock Island, South Andaman	300	92°59'14.016"E 12°2'18.55"N	92°59'21.766"E 12°2'12.673"N
65	Panchawati, Rangat	Middle Andaman	200	92°57'46.94"E 12°34'30.853"N	92°57'50.484"E 12°34'25.385"N
66	Pokadera, Mayabunder	Middle Andaman	50	92°55'20.721"E 12°54'40.434"N	92°55'22.283"E 12°54'40.979"N
67	Pokadera, Mayabunder	Middle Andaman	200	92°54'32.375"E 12°54'33.557"N	92°54'37.347"E 12°54'29.353"N

68	Pokadera, Mayabunder	Middle Andaman	100	92°54'9.896"E 12°54'52.074"N	92°54'7.585"E 12°54'49.899"N
69	Pokadera, Mayabunder	Middle Andaman	100	92°53'56.292"E 12°54'41.805"N	92°53'57.542"E 12°54'38.817"N
70	Lucknow, Mayabunder	Middle Andaman	200	92°53'24.996"E 12°53'35.541"N	92°53'18.778"E 12°53'33.861"N
71	Nischintapur	North Andaman	90	92°56'45.903"E 13°7'6.098"N	92°56'45.011"E 13°7'3.316"N
72	Shipur, Diglipur	North Andaman	60	93°4'1.227"E 13°16'14.327"N	93°4'2.756"E 13°16'15.279"N
73	Shipur, Diglipur	North Andaman	3584	93°2'39.488"E 13°15'52.783"N	93°3'58.452"E 13°16'10.633"N
74	Durgapur, Diglipur	North Andaman	100	93°2'35.695"E 13°15'59.657"N	93°2'38.486"E 13°15'57.995"N
75	Durgapur, Diglipur	North Andaman	40	93°2'46.343"E 13°16'22.158"N	93°2'45.324"E 13°16'21.321"N
76	Hut Bay	Little Andaman	5000	92°32'47.846"E 10°37'20.303"N	92°33'40.766"E 10°35'16.95"N
77	Johinder Nagar	Great Nicobar	420	93°55'17.467"E 6°56'59.733"N	93°55'28.743"E 6°57'7.734"N
78	Thersa Island	Thersa Island, Nicobar	500	93°7'31.142"E 8°18'23.913"N	93°7'32.018"E 8°18'7.064"N
79	Port Blair	South Andaman	11270	92°45'3.223"E 11°38'39.622"N	92°43'21.245"E 11°41'6.513"N
80	Ross Island, Port Blair	South Andaman	580	92°45'45.137"E 11°40'38.419"N	92°45'46.7"E 11°40'25.815"N
81	Chattam Island, Port Blair	South Andaman	1315	92°43'35.65"E 11°41'17.281"N	92°43'35.65"E 11°41'17.281"N
82	Bambooflat, Hope Town	South Andaman	4380	92°44'19.907"E 11°41'28.89"N	92°43'2.499"E 11°42'16.513"N
83	Port Blair	South Andaman	2950	92°43'9.171"E 11°39'9.219"N	92°43'28.642"E 11°39'42.411"N
84	Durgapur, Diglipur	North Andaman	2124	93°1'59.295"E 13°16'29.573"N	93°1'59.295"E 13°16'29.573"N
85	Aerial Bay, Diglipur	North Andaman	200	93°1'39.861"E 13°16'56.806"N	93°1'36.464"E 13°16'51.497"N
86	Aerial Bay, Diglipur	North Andaman	200	93°1'40.673"E 13°16'55.571"N	93°1'41.363"E 13°16'49.912"N
87	Sitapur	Neil Island, South Andaman	28	93°4'3.903"E 11°50'25.957"N	93°4'4.822"E 11°50'25.9"N
88	Vijaynagar	Havelock, South Andaman	800	93°0'37.022"E 11°59'49.068"N	93°0'46.25"E 11°59'25.584"N
89	Nilambur	Baratang Island,Middle Andaman	400	92°45'59.942"E 12°10'28.561"N	92°45'54.702"E 12°10'17.622"N

Table-11: The length of the vulnerable reaches of the islands of Andaman and Nicobar

Sr. No.	Village Name	Island Group	LENGTH in m	Starting Point Latitude & Longitude	Ending Point Latitude &Longitude
1	Campellbay, Govind Nagar,Joginder Nagar, Vijay Nagar, Laxmi Nagar, Gandhi nagar, Shastri Nagar	Great Nicobar Island	46350	93°54'48.407"E 7°1'43.1"N	93°53'22.293"E 6°48'8.522"N
2	Katchal Island	Katchal Island	8400	93°24'7.571"E 8°0'17.82"N	93°25'23.364"E 7°58'1.748"N
3	Nancowry Island	Nancowry Island	2725	93°32'14.709"E 8°1'31.746"N	93°33'20.557"E 8°1'28.081"N
4	Car Nicobar Island	Car Nicobar Island	50550	92°43'15.086"E 9°11'8.316"N	92°43'15.086"E 9°11'8.316"N
5	Hutbay	Little Andaman	14800	92°35'6.541"E 10°39'28.615"N	92°33'48.626"E 10°33'53.043"N
6	Chidiayatapu, New Rangchang, Beodanabad	South Andaman	16500	92°44'37.973"E 11°34'49.752"N	92°42'33.291"E 11°29'1.301"N
7	Brookshabad to Dundas Point	South Andaman	53565	92°45'5.719"E 11°38'13.793"N	92°42'34.262"E 11°40'13.353"N
8	Shore point, Bambooflat, Hope Town, North Bay	South Andaman	10160	92°45'21.799"E 11°42'3.227"N	92°43'1.964"E 11°42'16.754"N
9	Dharsatpur to Padmanapuram	Middle Andaman	18820	92°56'27.941"E 12°29'10.789"N	92°57'25.928"E 12°36'5.79"N
10	Danapur, Mayabunder, Pokadera	Middle Andaman	14300	92°54'22.745"E 12°53'3.264"N	92°53'14.241"E 12°53'32.791"N
11	Aerial Bay, Durgapur, Shipur	North Andaman	9920	93°4'5.688"E 13°16'18.141"N	93°1'36.563"E 13°16'52.119"N
12	LakshmiPur , Neil kendra, Brathpur, Sita Pur	Neil Island South Andaman	7300	93°4'14.896"E 11°50'22.715"N	93°0'49.858"E 11°50'55.717"N
13	Ram Nagar	Neil Island, South Andaman	5080	93°3'47.506"E 11°49'9.82"N	93°1'49.571"E 11°49'31.325"N
14	Govinda Nagar, Vijay Nagar	Havelock Island, South Andaman	14875	93°2'12.618"E 11°56'53.969"N	92°58'33.596"E 12°2'19.418"N