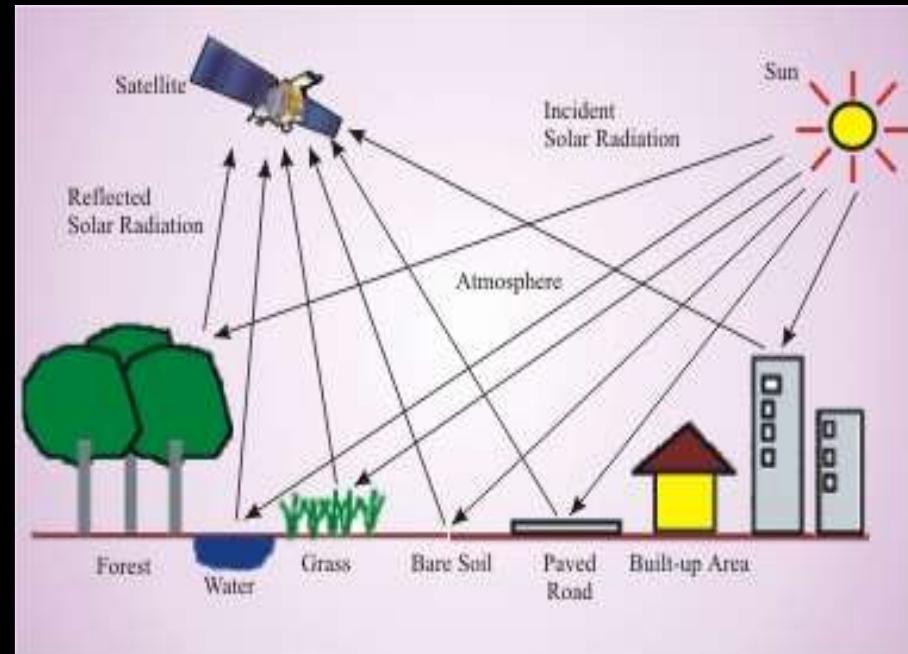
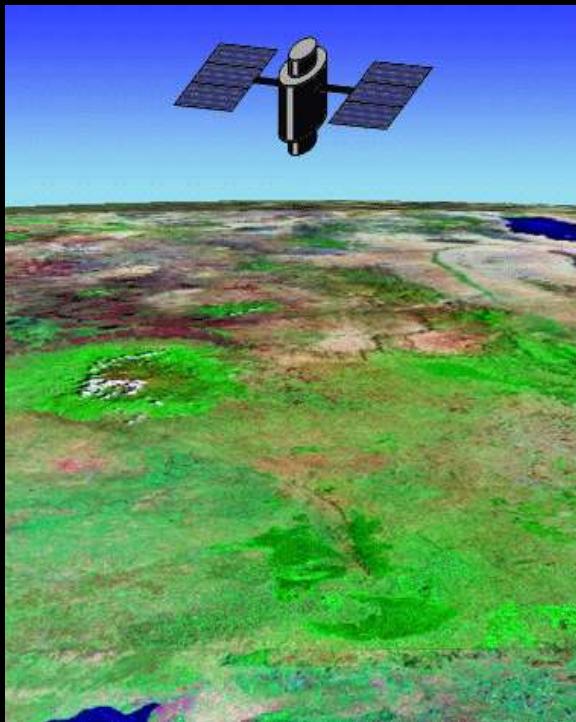


Topic-4

Remote sensing Applications In Environmental Sciences

16th August 2022

Remote sensing



EMS

THE ELECTRO MAGNETIC SPECTRUM

Wavelength
(metres)

Radio

Microwave

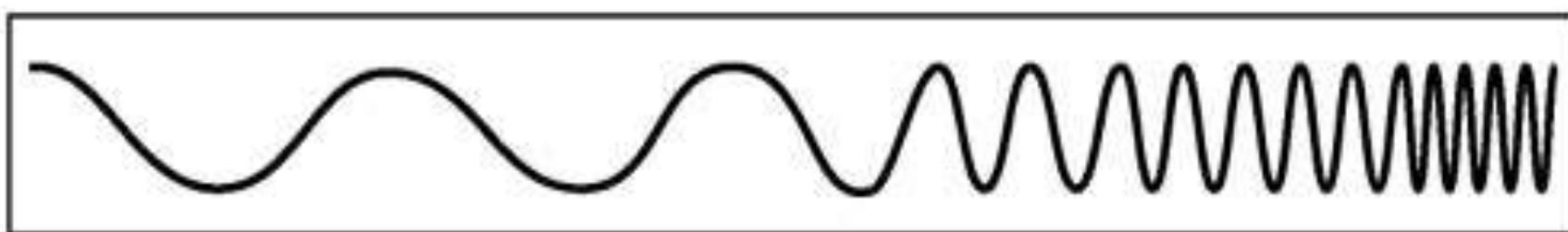
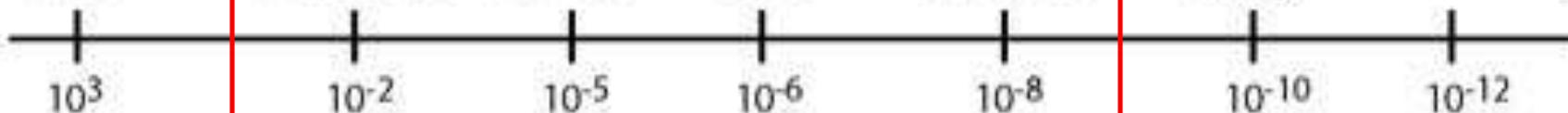
Infrared

Visible

Ultraviolet

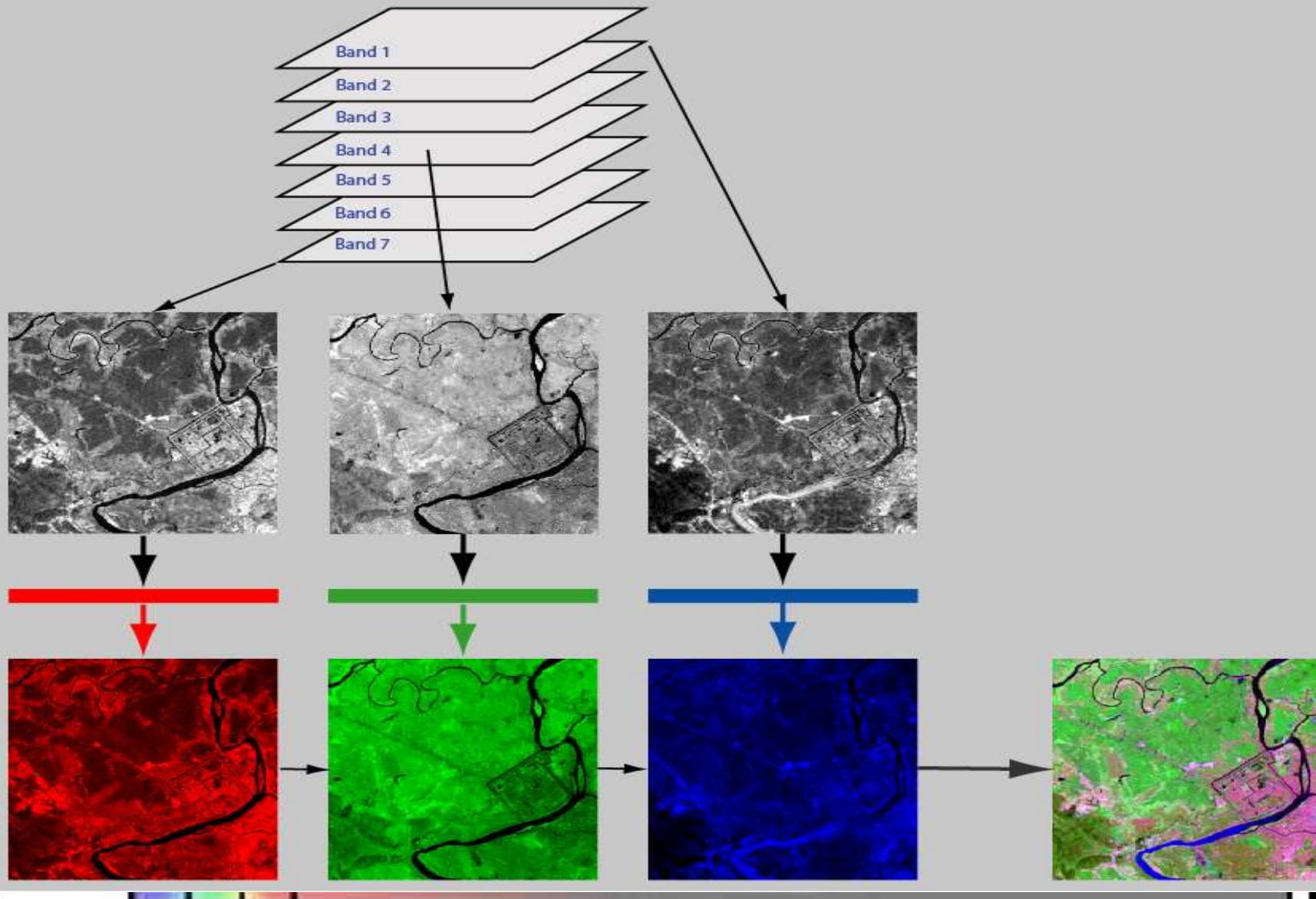
X-Ray

Gamma Ray

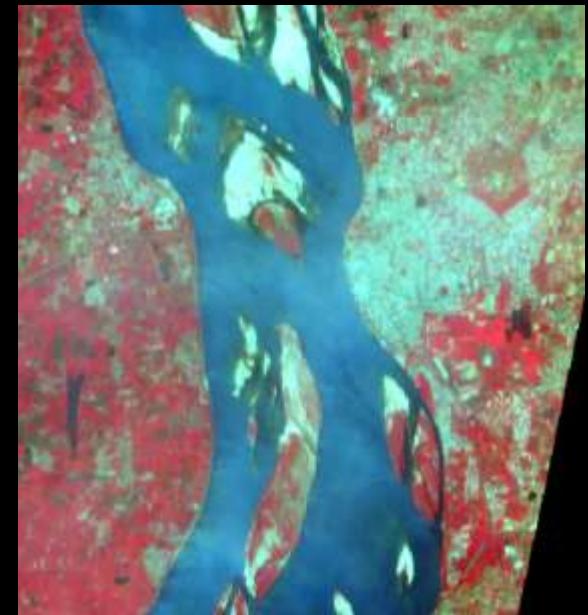
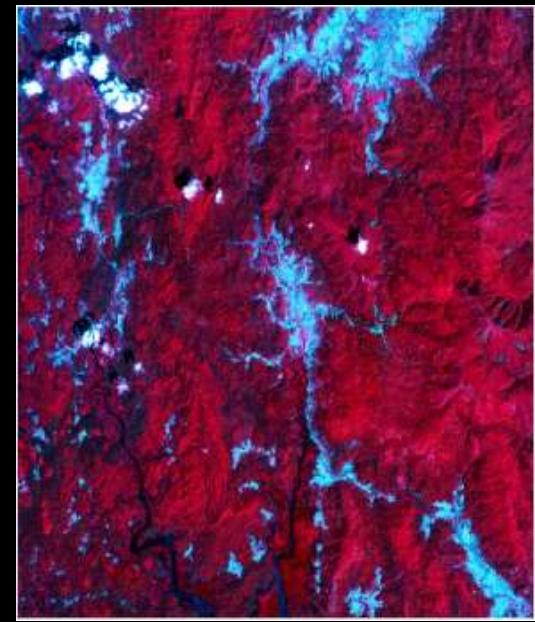
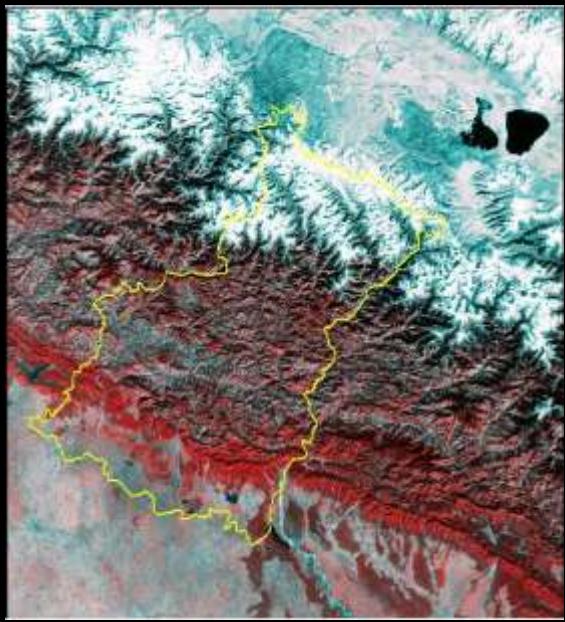


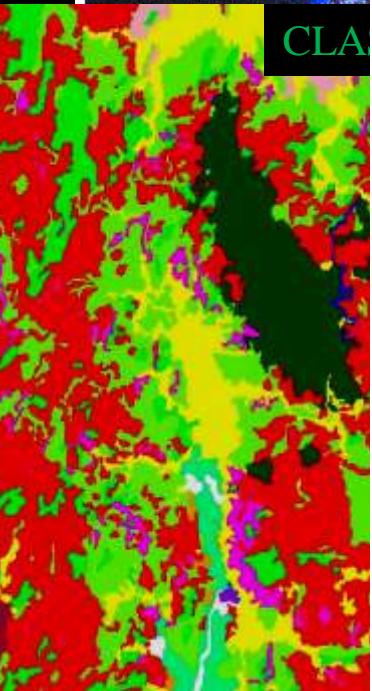
Frequency
(Hz)





Satellite images





Mapping and Analyzing Vegetation Types of North Andaman Islands, India

By Geospatial World - September 1, 2009

SHARE

Facebook

Twitter

P.Rama Chandra Prasad

National Collateral Management Services Limited,
Hyderabad, India.

Ch. Sudhakar Reddy, G.Rajasekhar

Forestry and Ecology Division,
National Remote Sensing Agency, Dept of Space,
Balanagar, Hyderabad, India – 500037.

C.B.S.Dutt

Indian Space Research Organization,
Dept of space, Anthariksh Bhavan,
Bangalore, India.

ABSTRACT

A detailed vegetation map is required for the effective management of natural resources. An attempt was made for the first time to prepare vegetation type of north Andaman Islands using the high resolution LISS III satellite data. In the present study visual interpretation along with digital supervised classification aided in preparation of more accurate and precise vegetation type map of north

sociation	
1 Hill Tops	
use / land area	
ana	Area (%)
ns)	
1	21.3
3	31.0
2	15.5
6	67.8
2	3.3
3	6.6
6	8.4
3	1.4
5	19.6
0	8.5
	0.7
5	2.0
	0.0
9	1.4
2	12.6



Assessment of tsunami and anthropogenic impacts on the forest of the North Andaman Islands, India

P. RAMA CHANDRA PRASAD^{*†}, C. SUDHAKAR REDDY[‡], K. SUNDARA RAJAN[†], S. HAZAN RAZA[§] and C. BALA SUBRAHMANYA DUTT[¶]

[†]Laboratory for Spatial Informatics, International Institute of Information Technology,
Gachibowli, Hyderabad – 500 082, India

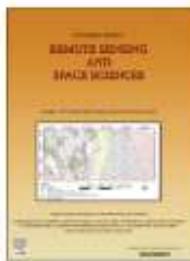
[‡]Forestry and Ecology Division, National Remote Sensing Agency, Department of
Space, Balanagar, Hyderabad, India – 500037

[§]Department of Environmental Sciences, Osmania University, Hyderabad, India

[¶]Indian Space Research Organization, Dept of space, Anthariksh Bhavan, Bangalore,
560094, India

(Received 19 October 2006; in final form 23 December 2007)

Forests are being depleted drastically at higher rates to cater to the needs of growing population. In this context, an attempt was made to identify the drivers of forest changes on the vegetation of the North Andaman islands by broadly (as per 1999 satellite data) may reduce to **108,500 ha**

HOSTED BY
Contents lists available at ScienceDirect

The Egyptian Journal of Remote Sensing and Space Sciences

journal homepage: www.sciencedirect.com

Research Paper

Assessing the impact of land use and land cover changes on the remnant patches of Kondapalli reserve forest of the Eastern Ghats, Andhra Pradesh, India

N.N. Salghuna^a, P. Rama Chandra Prasad^{a,*}, J. Asha Kumari^b^aLab for Spatial Informatics, International Institute of Information Technology, Gachibowli, Hyderabad 500032, India^bDepartment of Botany, Maris Stella College, Vijayawada, Andhra Pradesh 500008, India

ARTICLE INFO

Article history:

Received 25 August 2017

Revised 11 January 2018

Accepted 17 January 2018

Available online xxxx

Keywords:

Kondapalli forest

Eastern Ghats

Land consumption rate

Forest degradation

Vijayawada

ABSTRACT

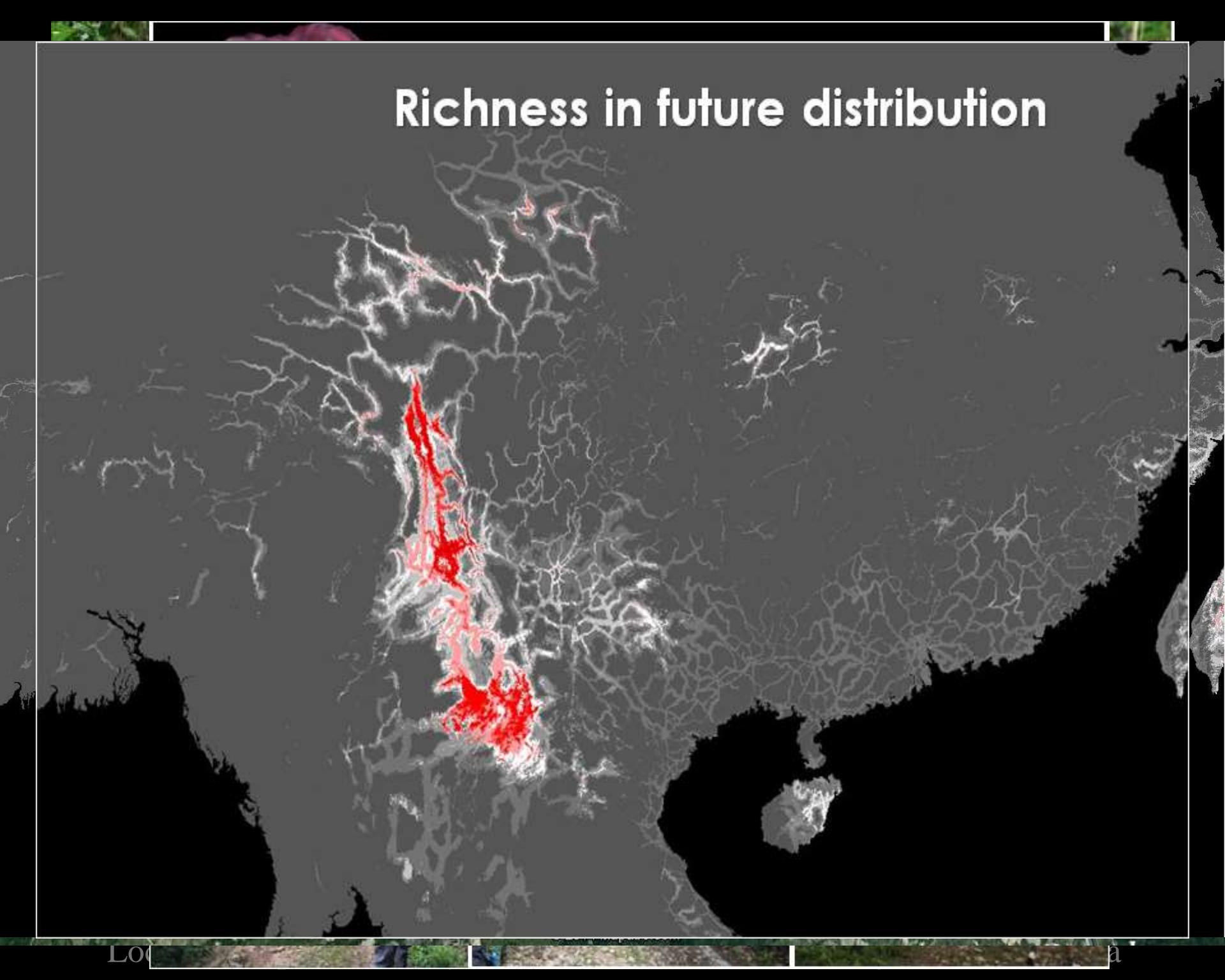
The Kondapalli reserve forest (KRF) of the Eastern Ghats, India is subjected to severe anthropogenic interference, despite its status as reserve forest. The present research focuses on assessing the land use and land cover changes in and around KRF using temporal satellite data. It is evident from the current study that there has been a considerable decrease in the forest cover from 1990 to 2015; as seen from 2017 data, huge urban expansions and development activities were observed around KRF. This increase is linked to the growth in population, thereby consuming land available for their basic needs. To assess the rate of urban expansion around the forest, Land consumption rate and Land absorption coefficient were computed. The result of this analysis showed a rapid growth in built-up land between 1990 and 2017 while the periods between 1990 and 2015 witnessed a reduction in the forest class. Further, the study projected adverse impact of the growth of the new capital city-Amaravati on the KRF and proposed requiring suitable conservation measures with respect to its current deforestation and degradation trends.

2009

2015

Water body with vegetation and Ash pond

Richness in future distribution

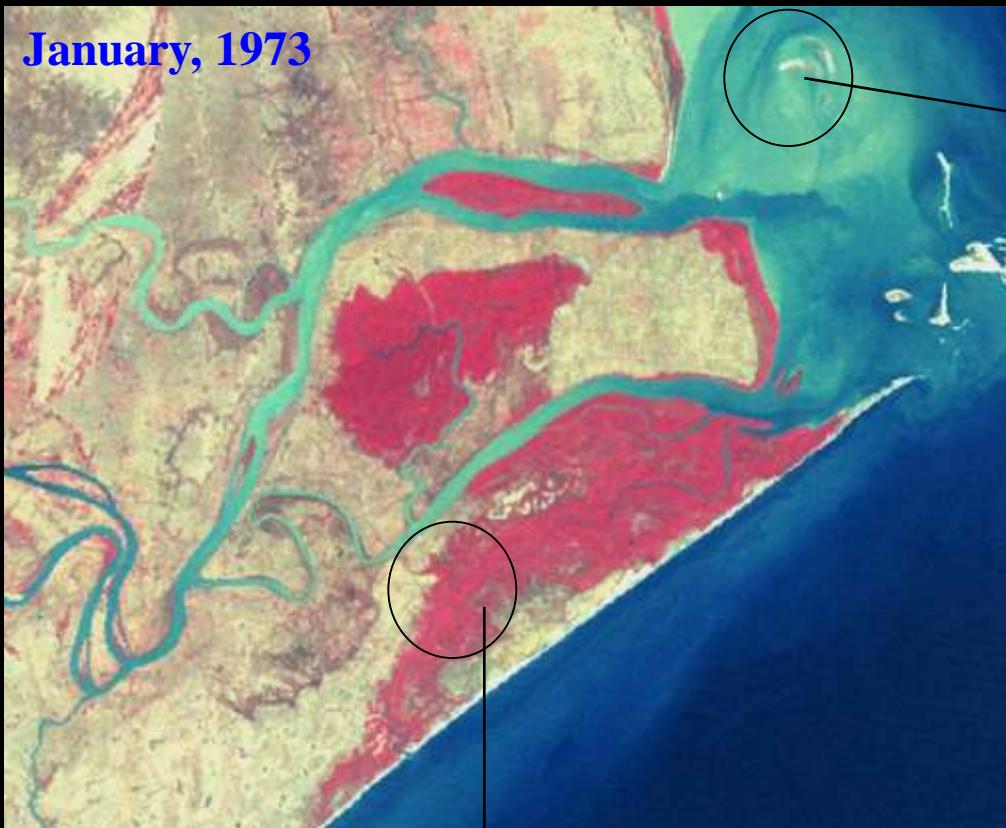


Loc

a

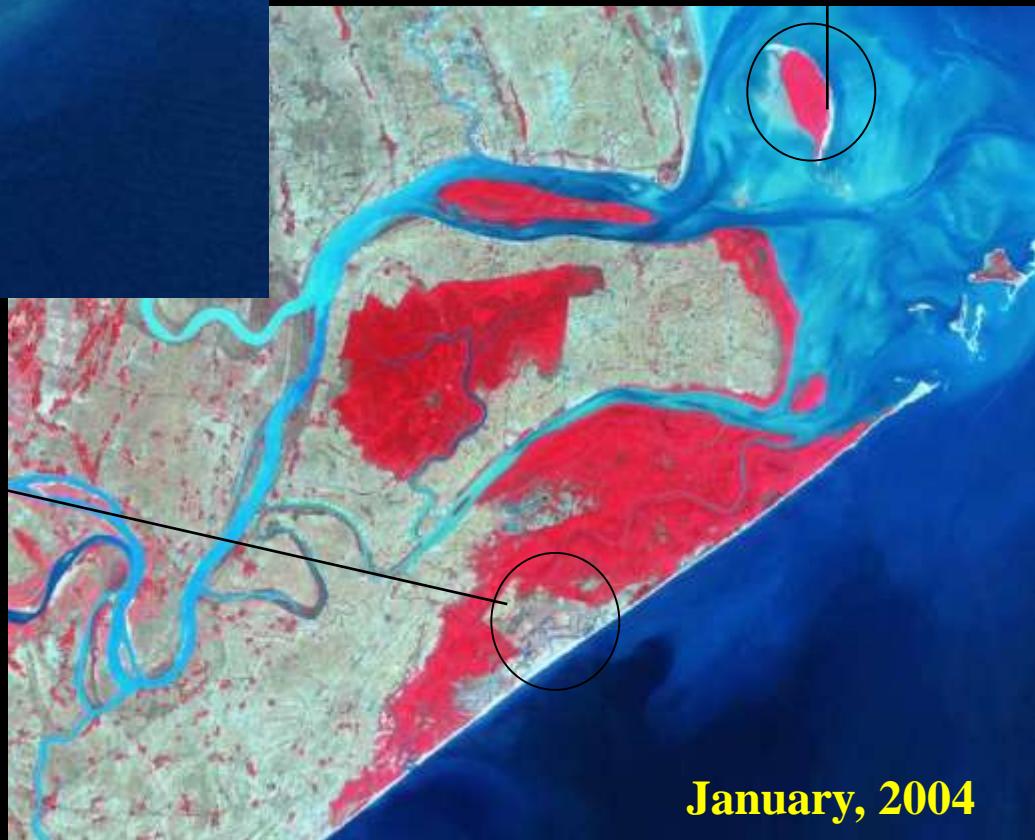
Mangroves of Bhitarkanika National Park, Orissa

January, 1973

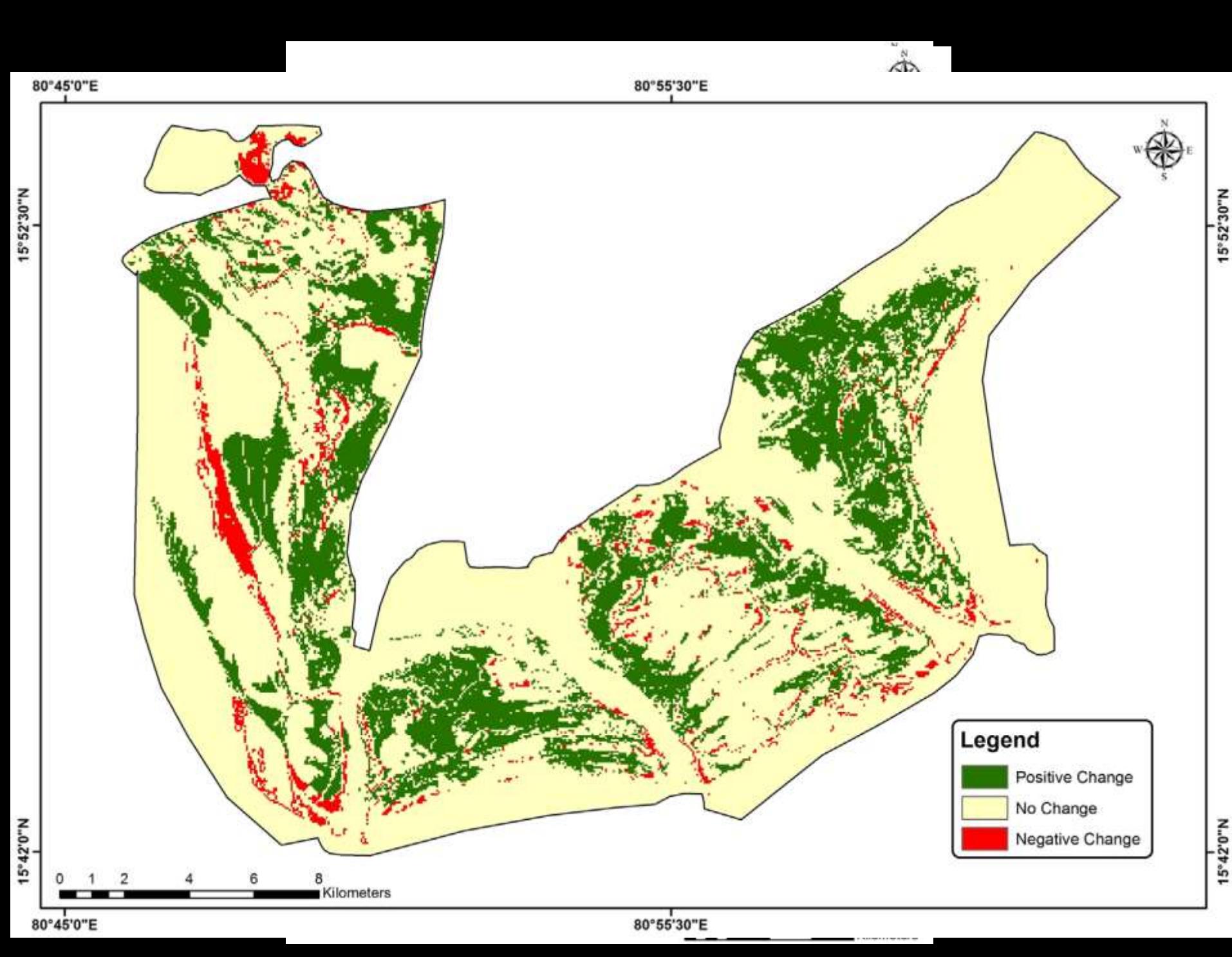


Formation of New Island
Due to accretion

Deforestation
(Conversion of forest
land to crop land)



January, 2004



Mangrove Dynamics

Year	Area (in ha)	
1972	8,276	
1981	8,047	1,324 ha loss
1990	6,952	
2000	10,198	
2009	13,836	8,864 ha hike
2014	15,816	

Reasons For initial depletion and later increase in Mangroves

52

Views

4

CrossRef citations
to date

0

Altmetric

Original Articles

Evaluating mangroves of Krishna Wildlife Sanctuary in relation to the general status of mangroves in Andhra Pradesh, India

P. Rama Chandra Prasad , C. V. L. Karuna & J. Asha Kumari

Pages 214-229 | Published online: 09 Feb 2017

 Download citation <https://doi.org/10.1080/00207233.2017.1283939> Check for updates Full Article Figures & data References Citations Metrics Reprints & Permissions Get access

Abstract

The present study was carried out to check whether there is a decline in mangrove cover of Andhra Pradesh state, India, as cited by a few studies. The research analysed mangrove dynamics of Krishna Wildlife Sanctuary of Andhra Pradesh state, using temporal satellite data of six periods. Analysis of these data showed major changes in the mangrove areas of the sanctuary. In 1972, the mangrove cover was 82.76 km²,

Understanding the changing lake dynamics and its sustainable management practices - A case study from Krishna District, Andhra Pradesh, India

Table 1. L

S. No	Fac
1	Co
2	Ov
3	Silt
4	Wa
5	Ex
6	Pat
7	Inf
8	To
9	En
10	De

Rama Chandra P. Prasad¹ and Jasti Asha Kumari²

¹Lab for Spatial Informatics
International Institute of Information Technology

Hyderabad 500032, India

²Department of Botany
Maris Stella College
Vijayawada 500008, India

Key Words: Climate, urbanization, lake dynamics, community participation, management practices, satellite image

ABSTRACT

The deterioration and loss of water bodies like lakes due to anthropogenic activities, are at the same pace at which forests are degraded. Lakes and ponds play a major role in the global cycle (carbon, water, etc.). They act as the basic units of hydrological systems to better understand the biogeochemical processes that take place within these aquatic systems and further for their management plans. As an initiative of managing resources at the unit level (lake) in the current study, we tried to understand the history and ecological dynamics of "Brahmayalingam Cheruvu", a lake located in the peri-urban areas of the rapidly expanding Vijayawada city, Andhra Pradesh State, India. The study is based on field inventories, local surveys and satellite data, both current and past. Use of satellite images aided in capturing the changing spatial-temporal lake dynamics due to climatic variations and government policy. The study draws attention to the management practices adopted for the sustainability of the lake by the village community and future threats that may arise due to developmental activities. It is observed that the lake is still maintained in its pristine state, though a part of its area has been lost in course of time. The current status of the lake is attributed to the community participation towards conserving this lake with appropriate management practices. The study also puts forward few management steps for conservation and preservation of the lake for future use.

RESEARCH ARTICLE

IS RAPID URBANIZATION LEADING TO LOSS OF WATER BODIES?

*P.Rama Chandra Prasad *† K.S.Rajan † Vijaya Bhole ‡ and C.B.S.Dutt #*

* Lab for Spatial Informatics, International Institute of Information Technology,
Gachibowli, Hyderabad – 500 082, India.

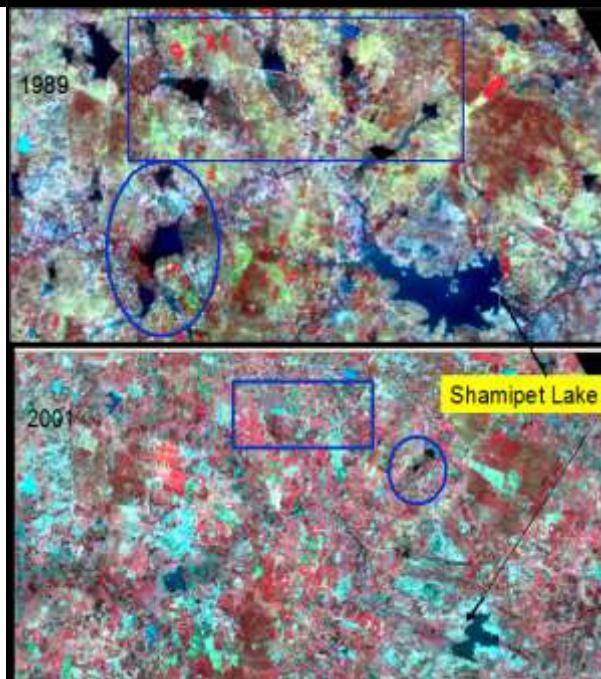
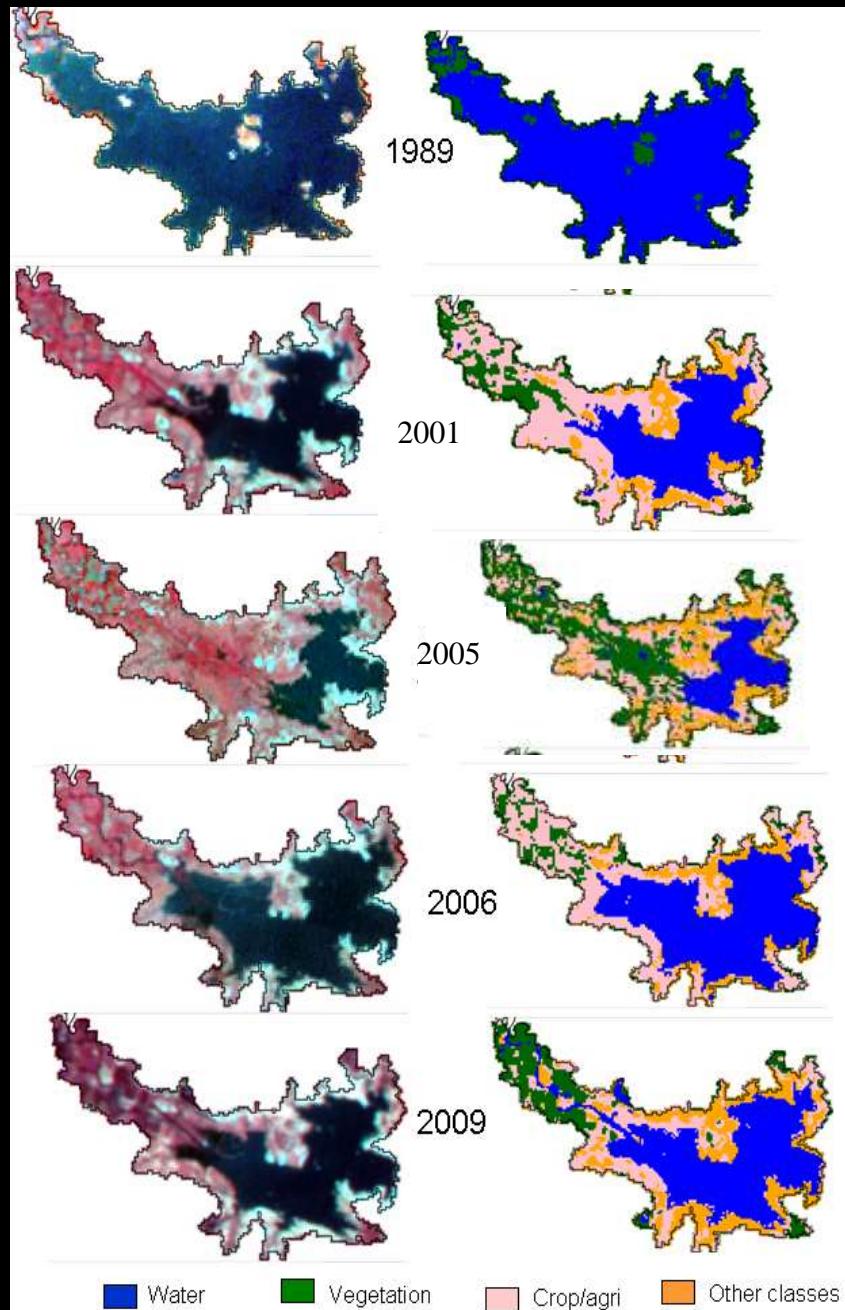
† Department of Geography, Osmania University, Hyderabad, India.

Indian Space Research Organization, Dept of space, Anthariksh Bhavan,
Bangalore, 560094, India.

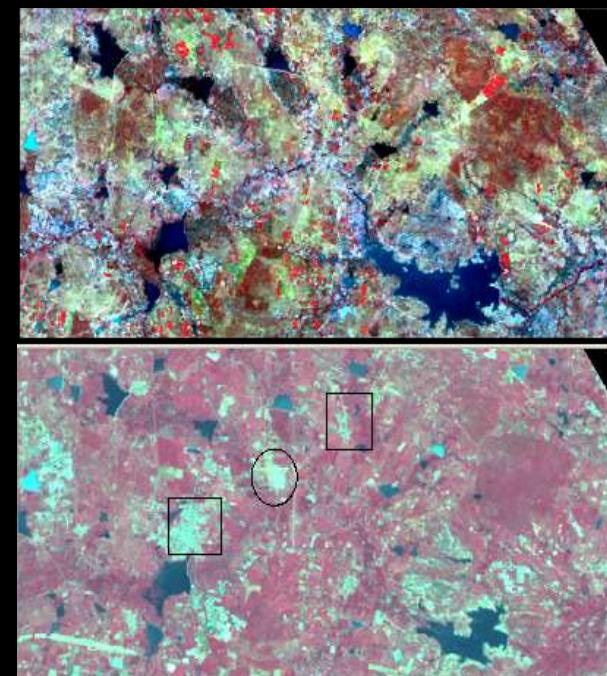
ABSTRACT:

Water bodies, the aquatic systems on land, are one of the important store houses for variety of wildlife as well as nesting and breeding sites for different kind of avifauna. Currently these water bodies are under tremendous human pressure due to rapid urbanization. The lakes and reservoirs, across the country, are in varying degrees of environmental degradation due to various anthropogenic activities. In this context a study

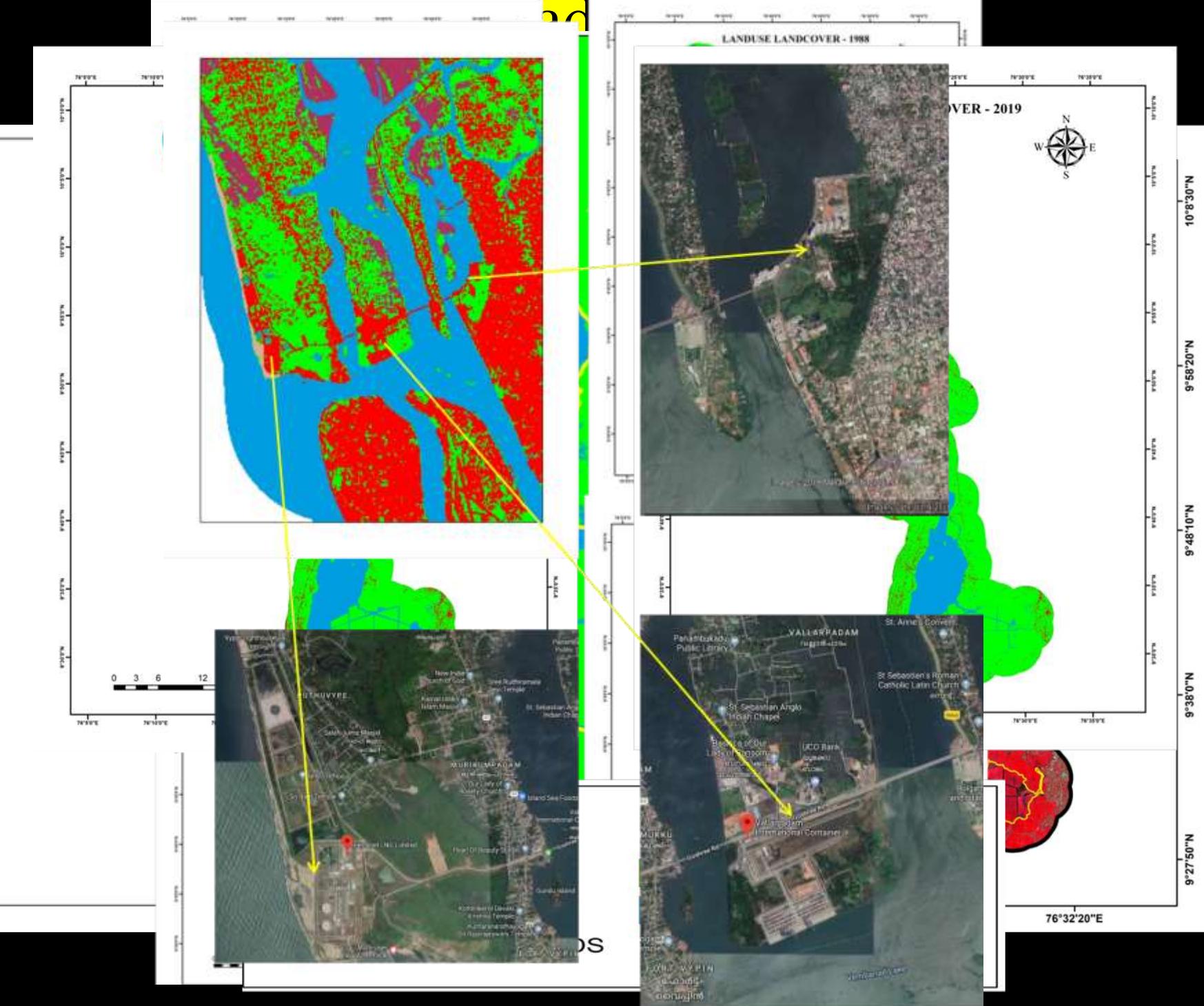
Wetland mapping – Monitoring Lakes

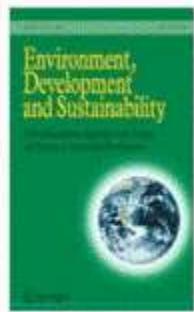


construction activities in the path way of upstream channels (2005)



Spatio-temporal changes observed in lake bed area





[Environment, Development and Sustainability](#)

pp 1–17 | [Cite as](#)

Assessment of spatio-temporal changes in land use and land cover, urban sprawl, and land surface temperature in and around Vijayawada city, India

Authors

Authors and affiliations

M. Vani  , P. Rama Chandra Prasad

Article

First Online: 27 February 2019

133

Downloads

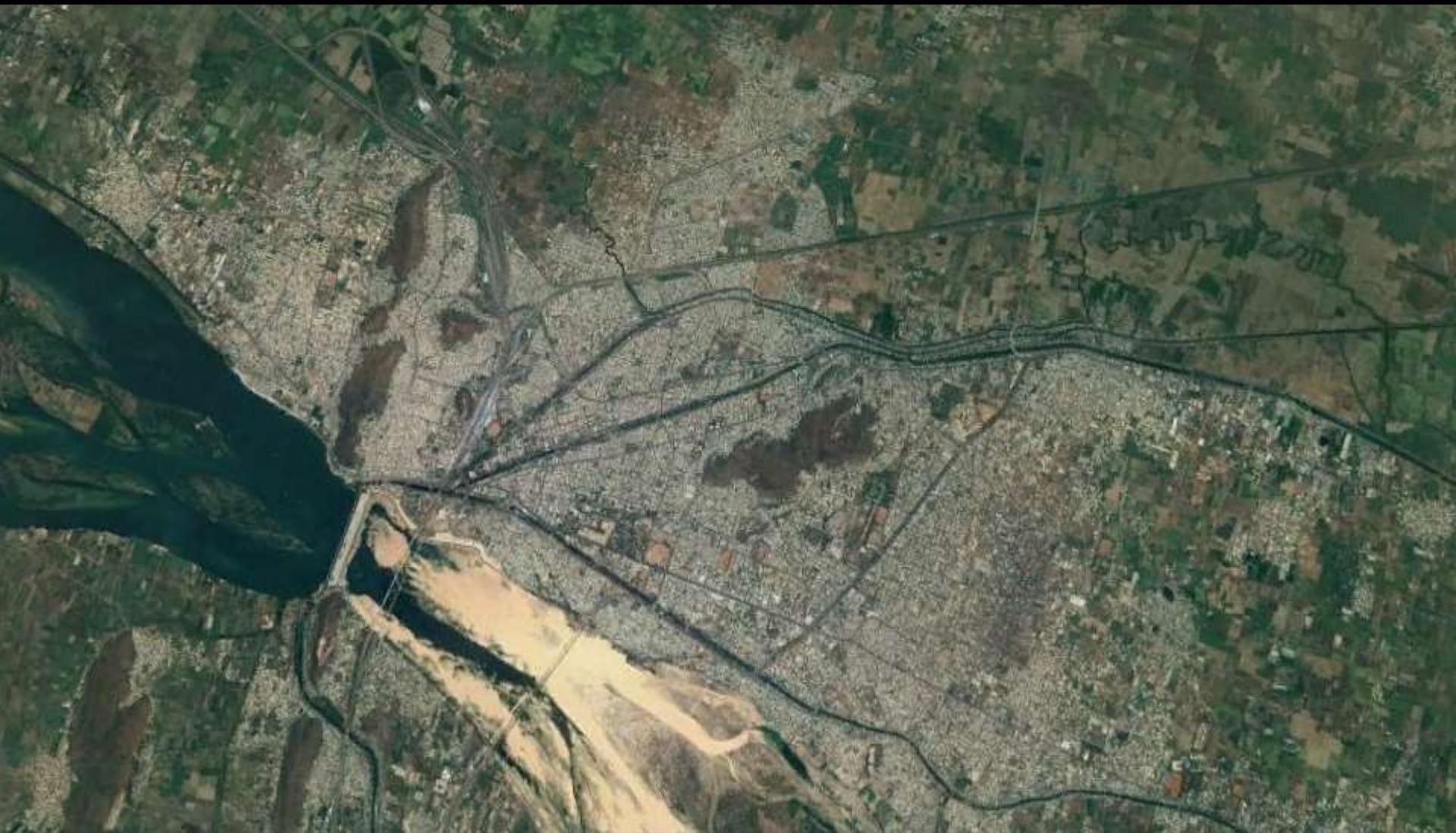
Abstract

The urban agglomeration is the unplanned growth of a city into its surrounding peri/rural areas causing unsustainable exploitation of natural resources. This leads to an increase in the land surface temperature that in turn results in climatic issues ranging from local to global scales. In the current study, an attempt has been made to map the urban growth and its associated land



0 1.5 2 3 4 5 6 7 8 9 10 11 12 Centimeters

river



12/27/2016

Thotapalle

Kansanpally

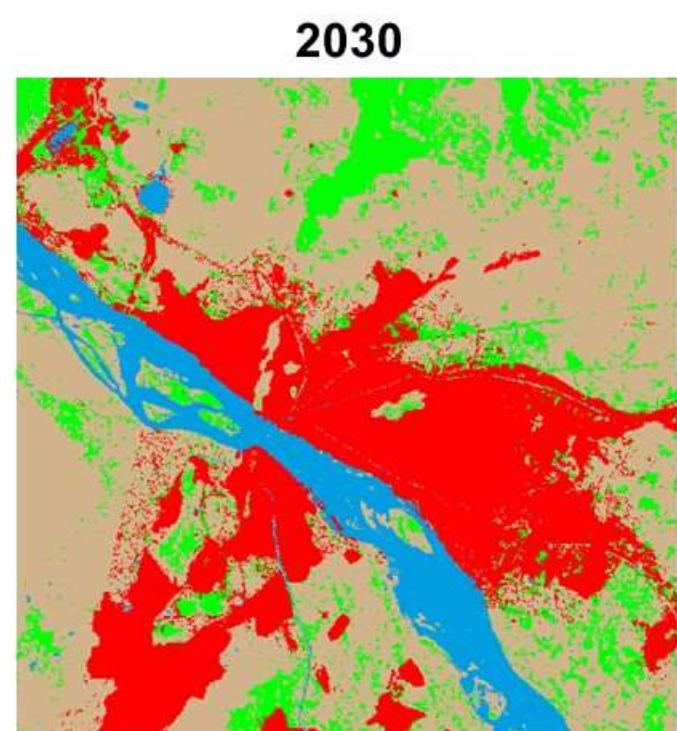
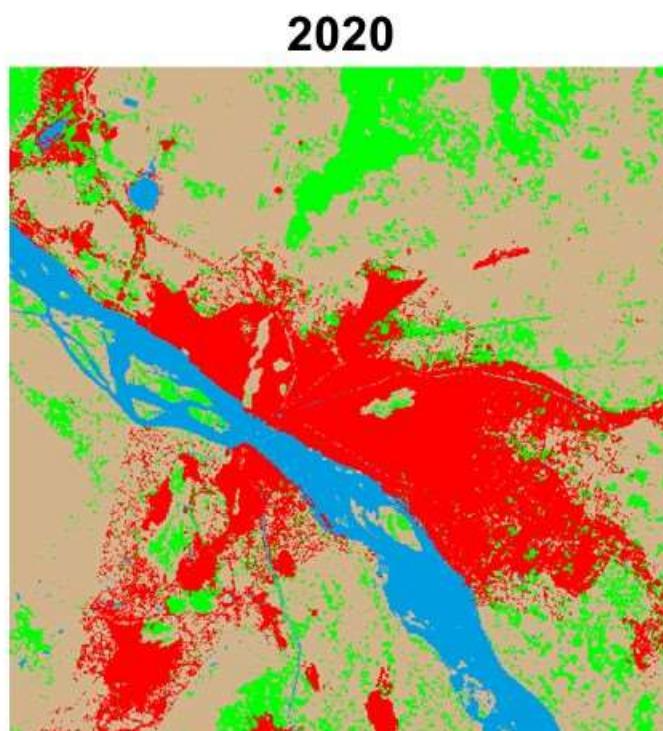
Brahma Lingam Cheruvu

Gollanapalle

Image © 2018 CNES / Airbus

Goo

Future LULC of the city



↑ N

Built-up

Vegetation

Waterbody

Others

0 3.5 7 14 21 Kilometers

Atmospheric Pollutants

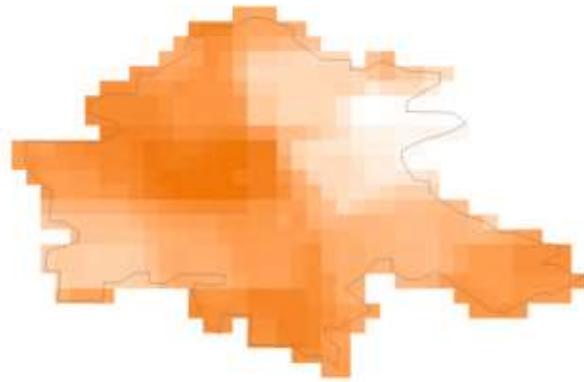
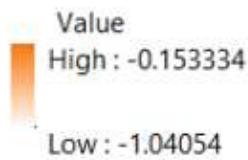


Fig. 11(a) Aerosol in Kharkiv 2019

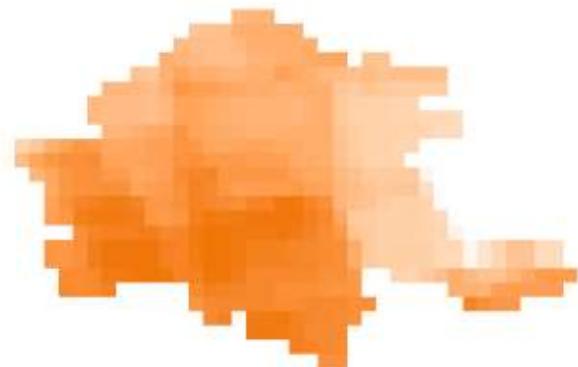


Fig. 11(b) Aerosol in Kharkiv 2022

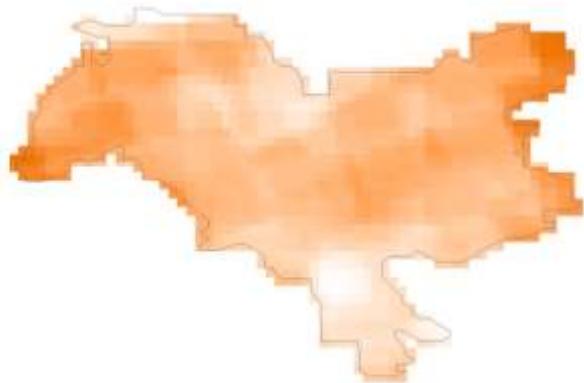


Fig. 11(c) Aerosol in Kyiv 2019

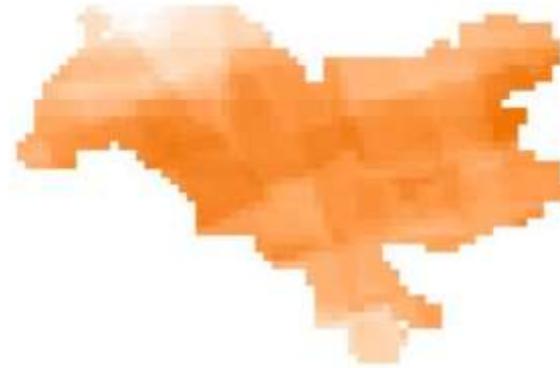


Fig. 11(d) Aerosol in Kyiv 2022

Tsunami and tropical island ecosystems: a meta-analysis of studies in Andaman and Nicobar Islands

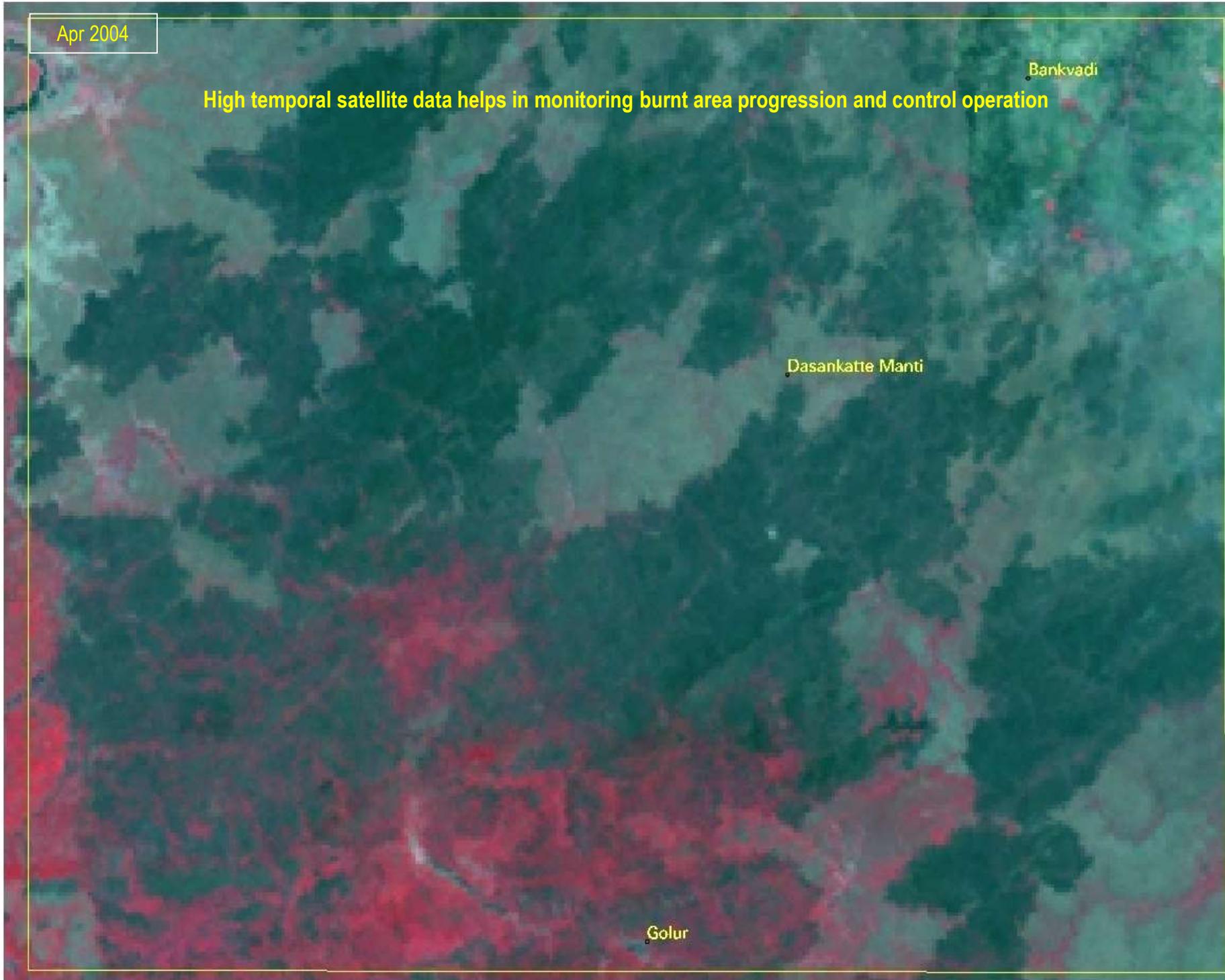
P. Rama Chandra Prasad · P. Mamtha Lakshmi · K. S. Rajan ·
Vijaya Bhole · C. B. S. Dutt

Received: 22 July 2011/Accepted: 4 November 2011
© Springer Science+Business Media B.V. 2011

Area
Data
IRS- F
04 5th
Result
258 ha

Abstract Tropical islands are special and sensitive ecosystems which are subjected to various disturbances imposed by human activities and natural disasters. A detailed study about the changing landscape scenarios of these fragile island systems induced by various driving factors could be used for setting up measurements in support of conservation and sustainable development projects. The current research is a meta-analysis of the studies carried out in Andaman and Nicobar islands which analyzed the impact of tsunami of 2004 using geospatial tools. Based on the analysis, it was observed that the Nicobar islands were more affected compared to the Andaman islands. The majority of the researchers used pre- and post-tsunami satellite imagery and adopted visual interpretation method to delineate the changed classes. The study infers uplift of land in Andaman (exposing) and subsidence (mangrove, interior forest and plantation).

Apr 2004



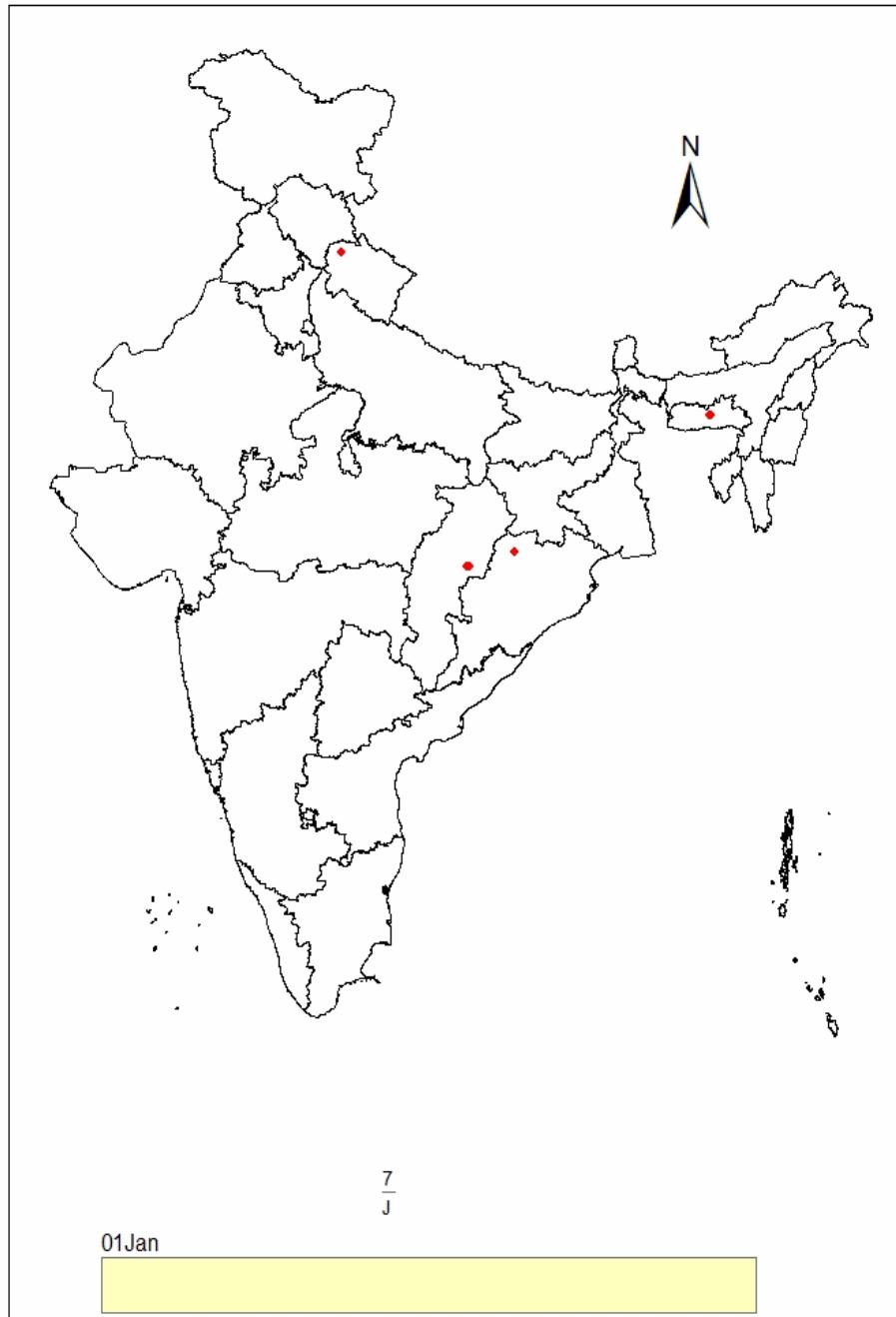
Bankvadi

High temporal satellite data helps in monitoring burnt area progression and control operation

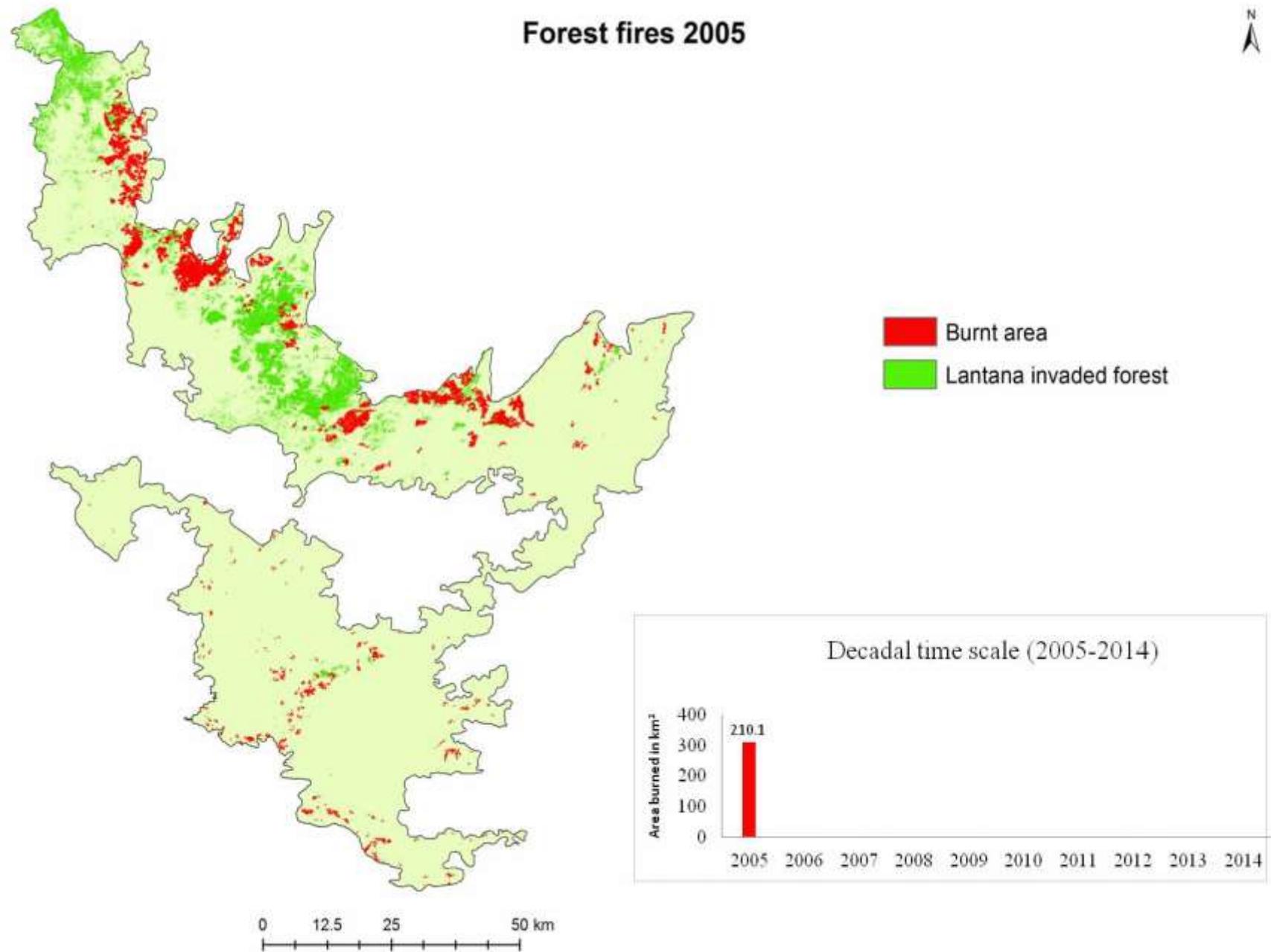
Dasankatte Manti

Golur

Daily monitoring of Forest Fires in India

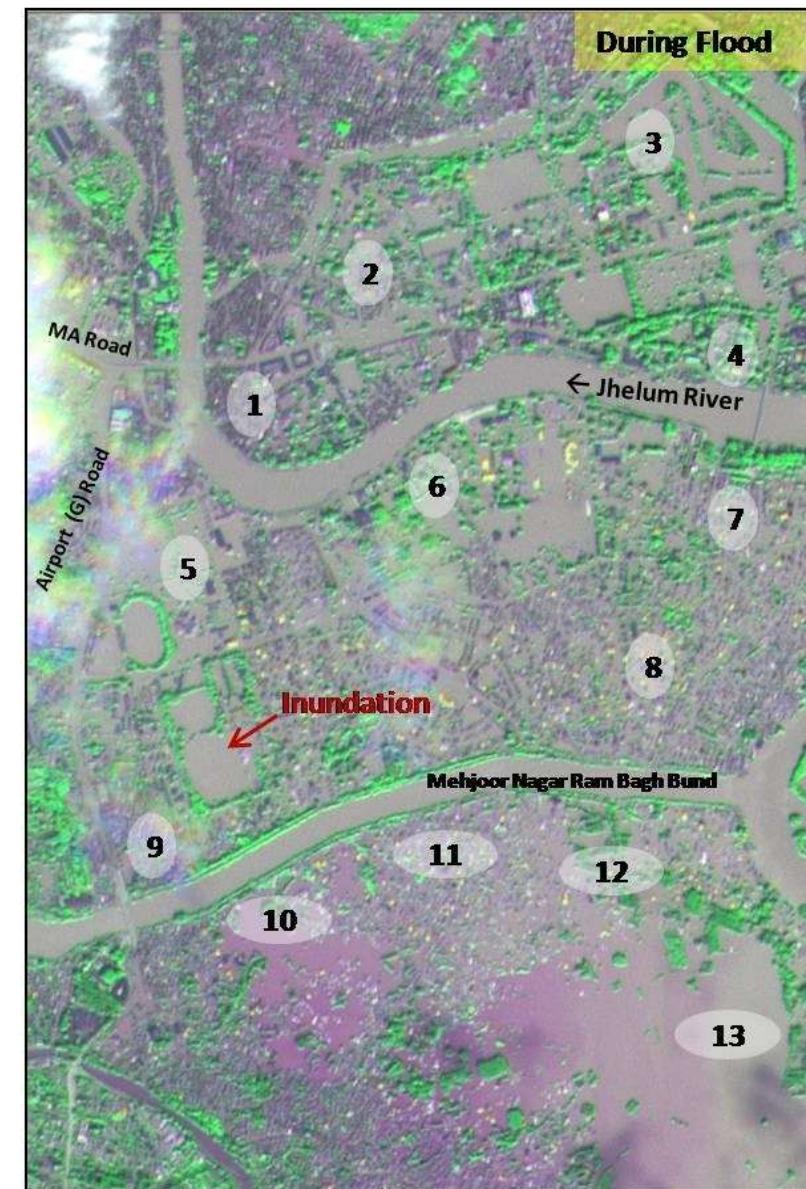
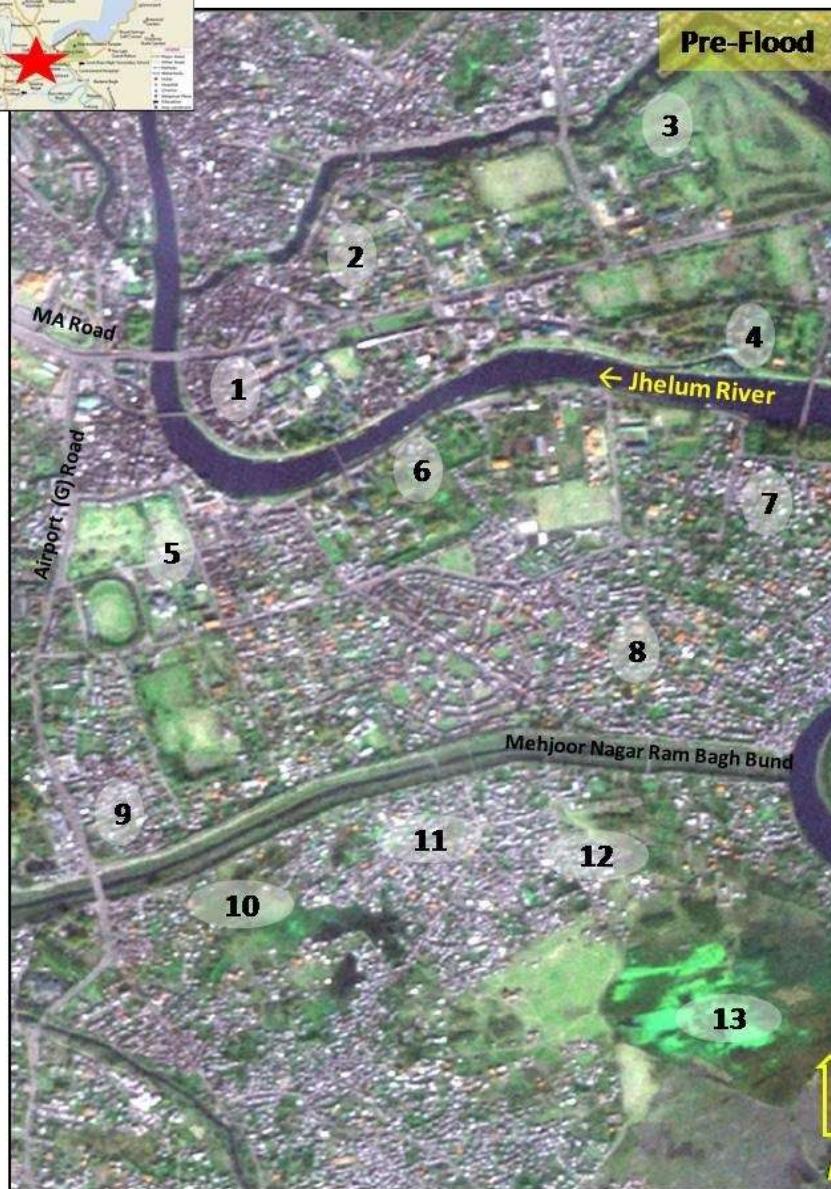


Relationship between forest fire and Lantana invasion: Nilgiri Biosphere Reserve





Floods

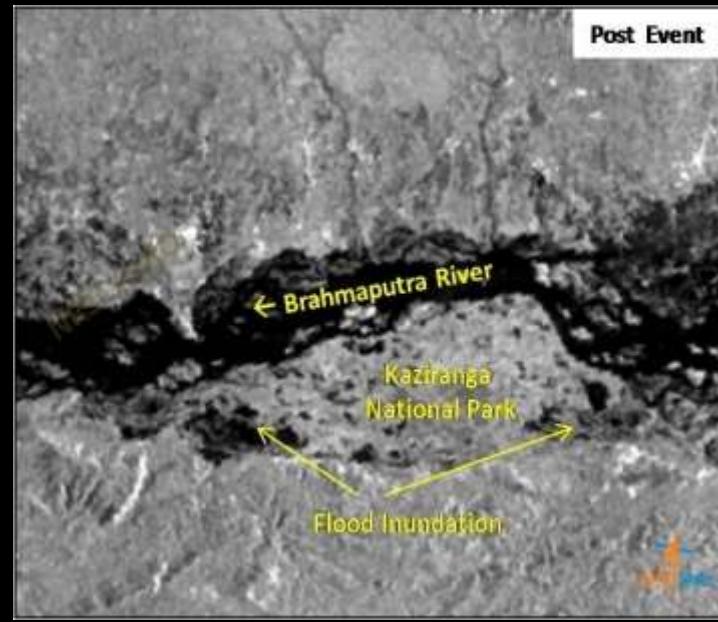
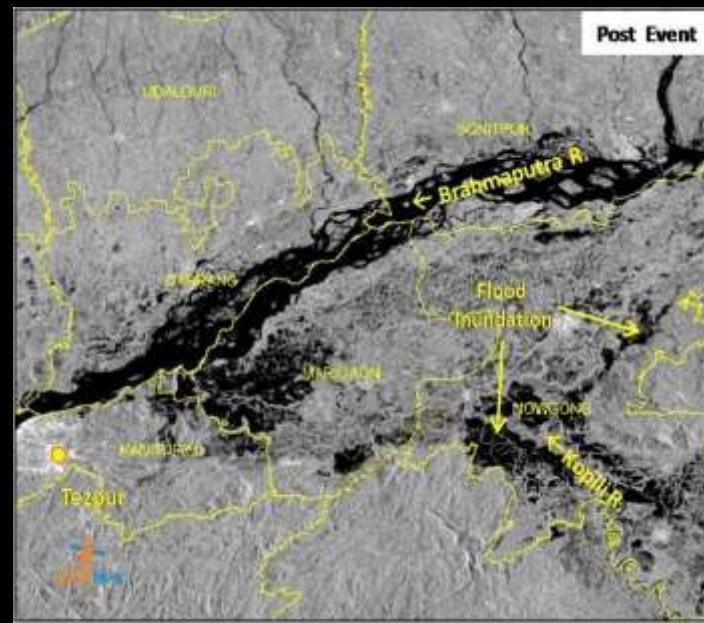
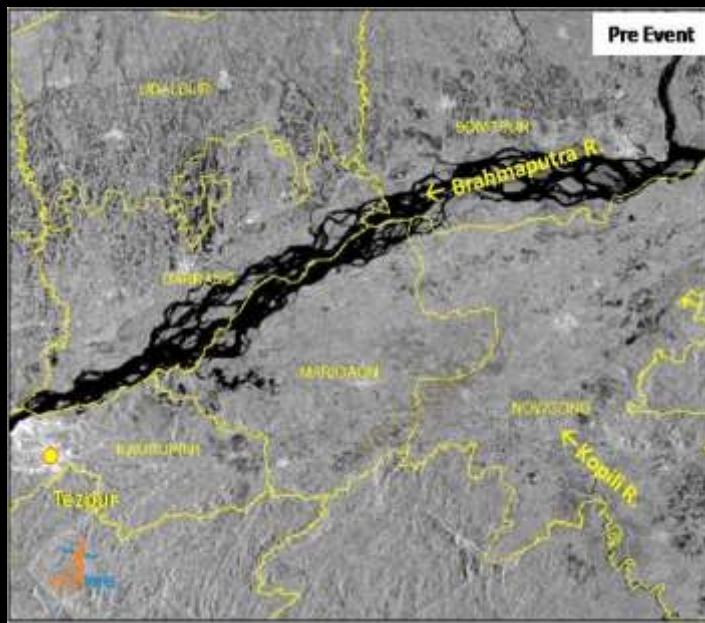


Affected areas

1. Press colony; 2. Kothi Bagh; 3. Nohata; 4. Munshi Bagh; 5. Wazir Bagh; 6. Hazur Bagh; 7. Raj Bagh; 8. Maharajpur; 9. Jawahar Nagar ; 10. RamBagh;
11. Mehjoor Nagar; 12. K.P.Bagh ; 13. Padshahi Bagh

Landslides in the Ansi River Valley around Mahori Area, Riasi District

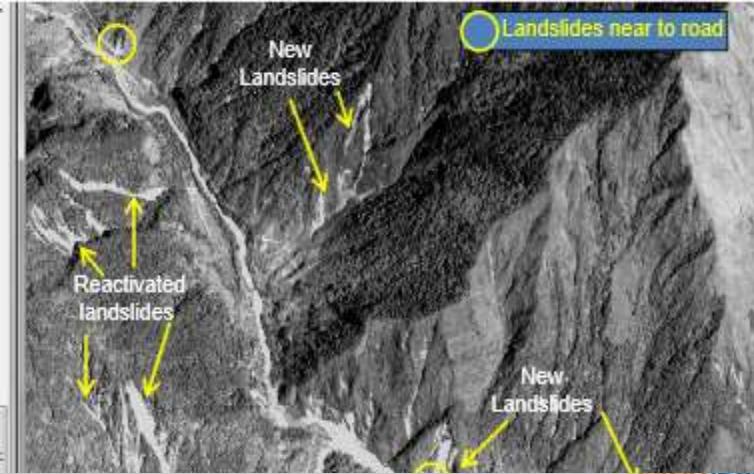




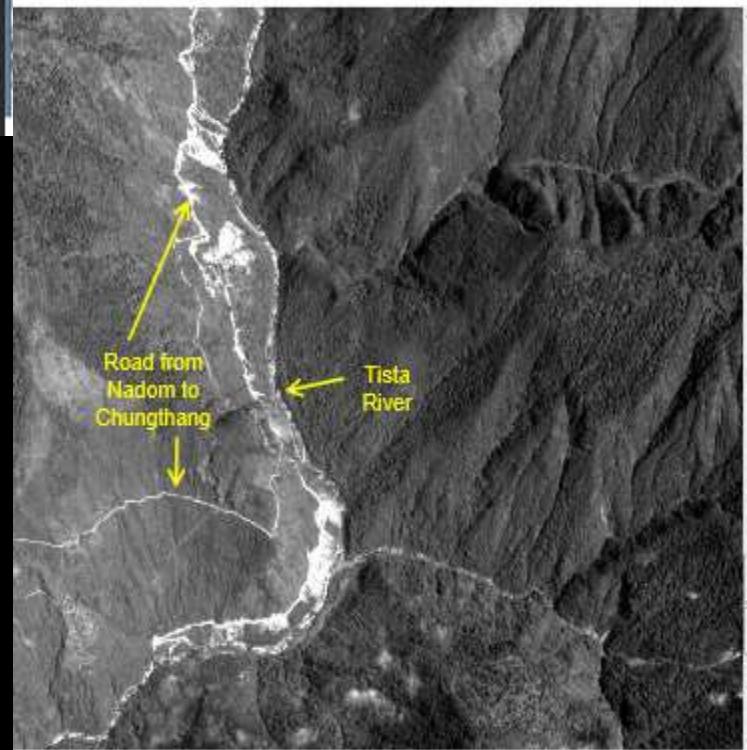
Pre-earthquake Cartosat – 1
(22-March-2011)



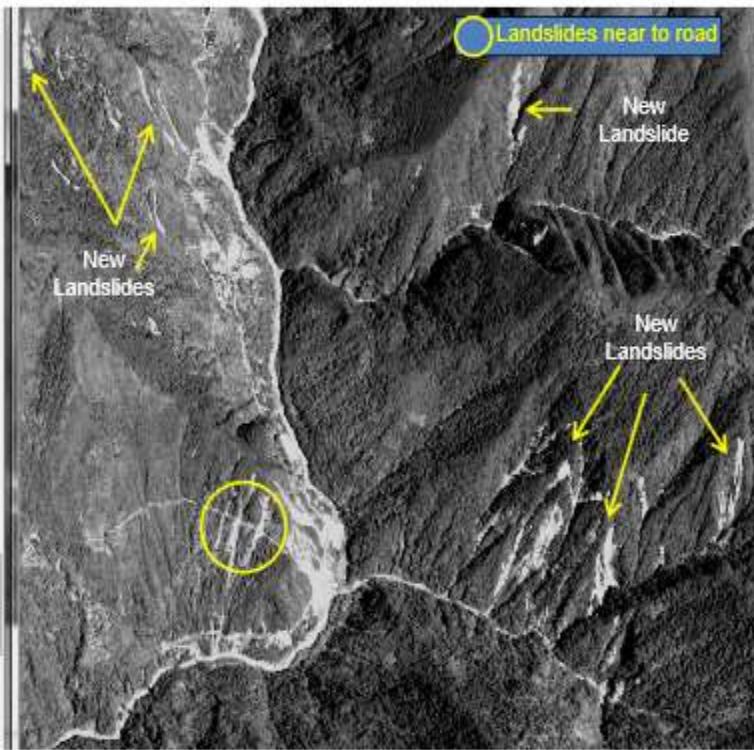
Post-earthquake Cartosat – 1
(30-Sept-2011)



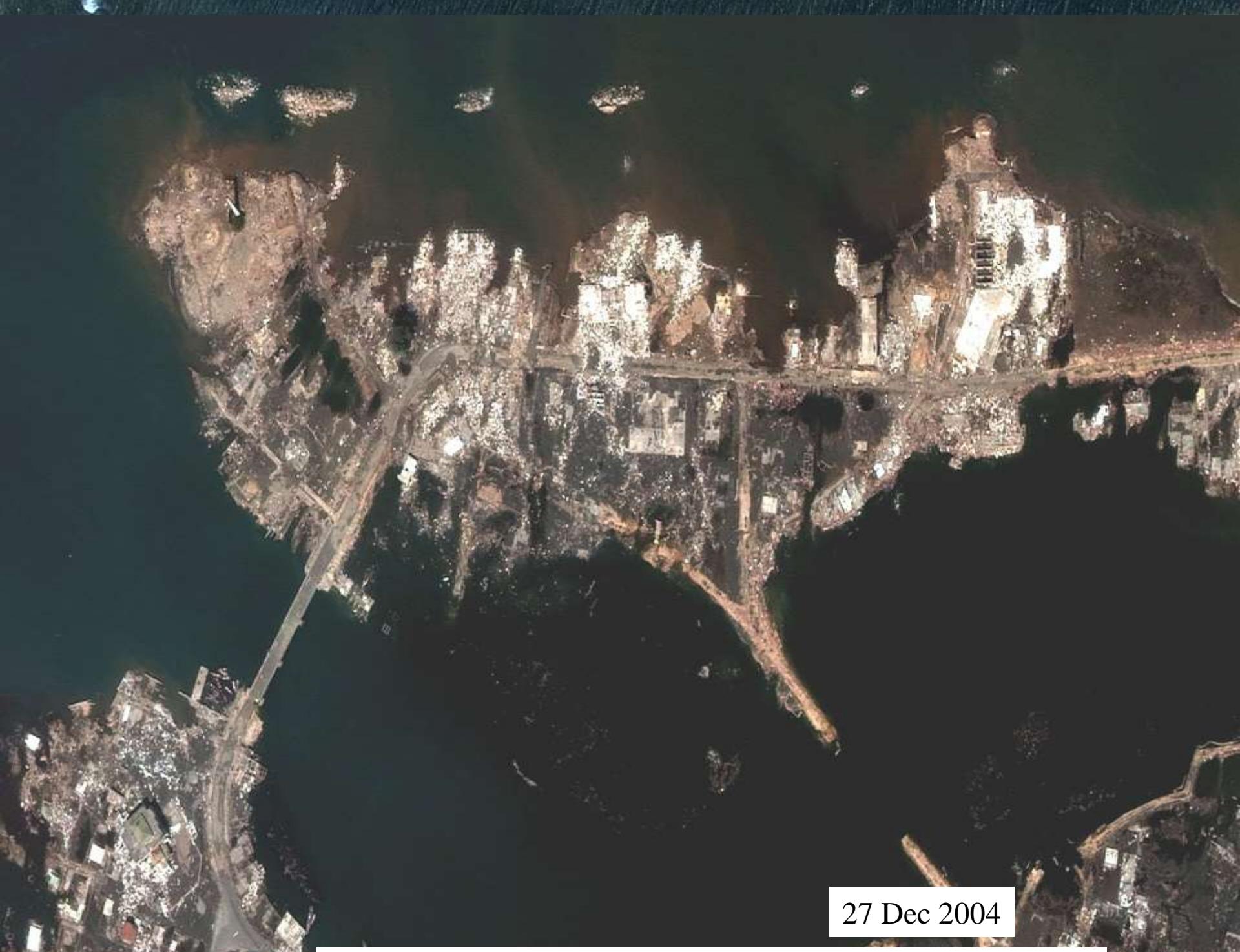
Pre-earthquake Cartosat – 1
(22-March-2011)



Post-earthquake Cartosat – 1
(30-Sept-2011)







27 Dec 2004

Banda Aceh Island (Indonesia) after Tsunami