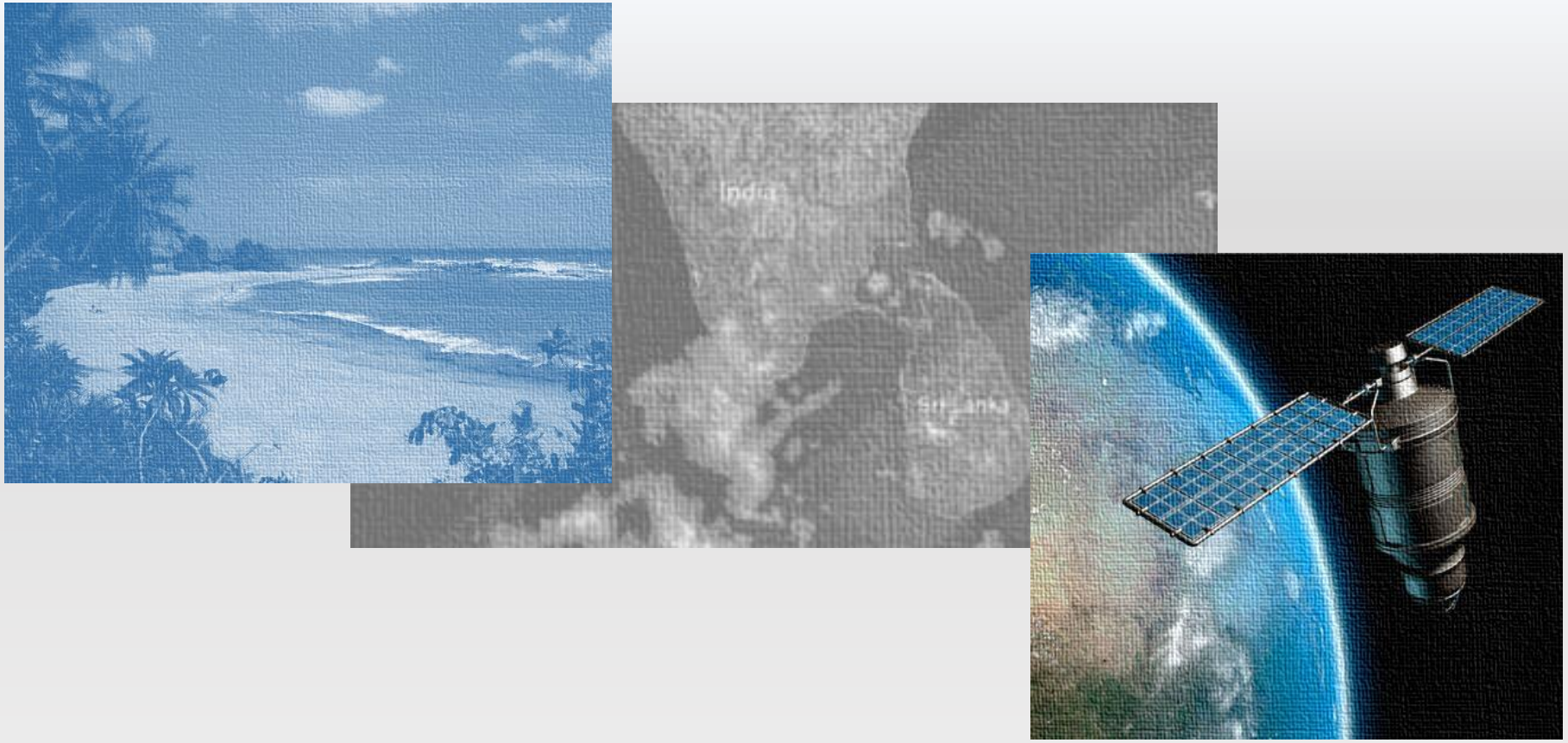
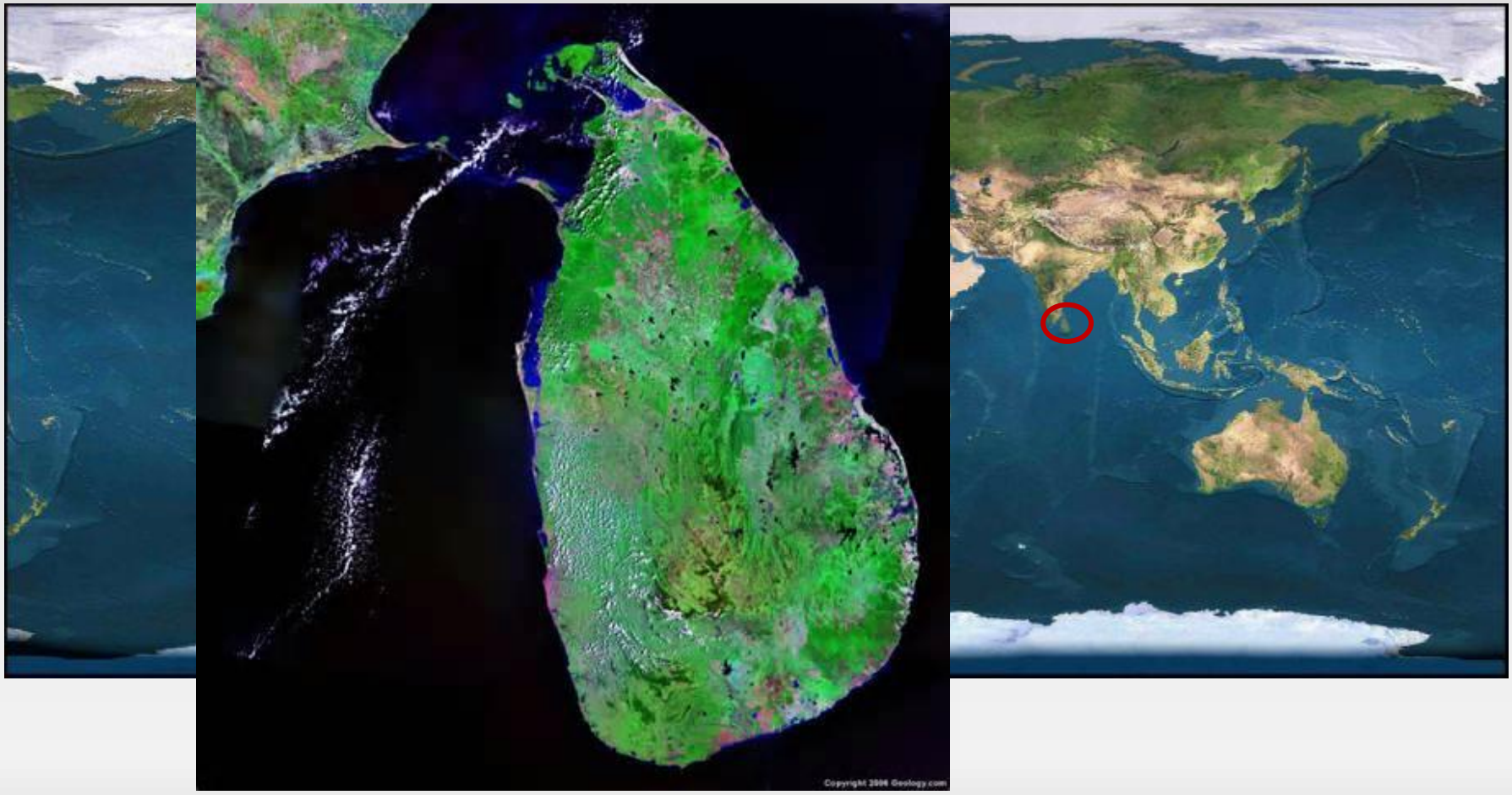


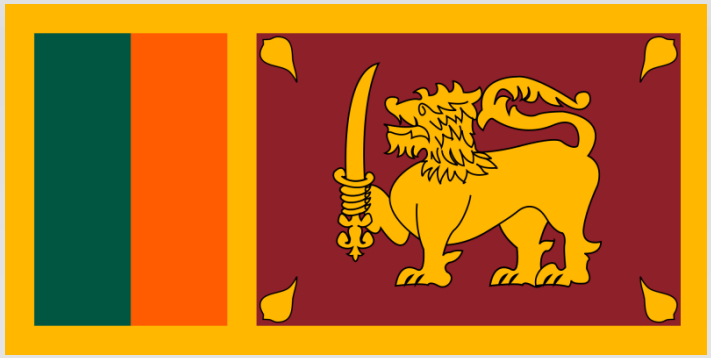
Panchali Umeshika
Research Scientist (Remote Sensing and GIS)

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

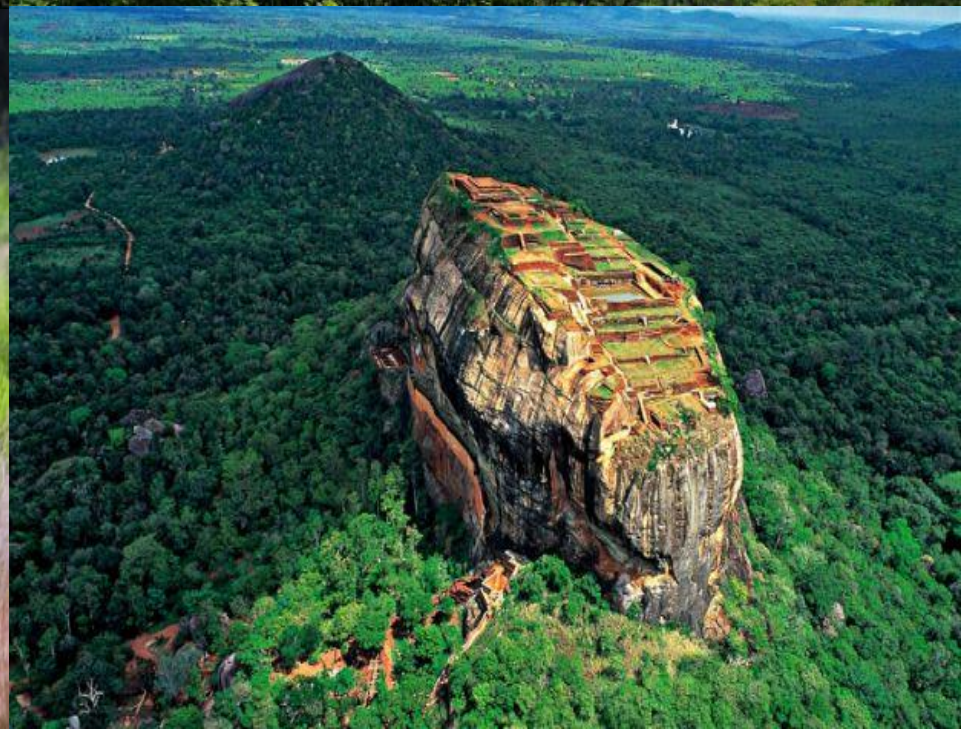
SRI LANKA



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA



- Area 65610km2
- Water 4.4%
- Population 20,277,597
- Highest biodiversity density in Asia



Arthur C Clarke Institute for Modern Technologies (ACCIMT)

Space Application Division

“SPACE TECHNOLOGY BASED AGRICULTURAL DROUGHT MONITORING AND EARLY WARNING”

- United Nations Economic & Social Commission for Asia and the Pacific (UNESCAP), Selected Sri Lanka as the pilot country for space technology based capacity building on drought monitoring and early warning.

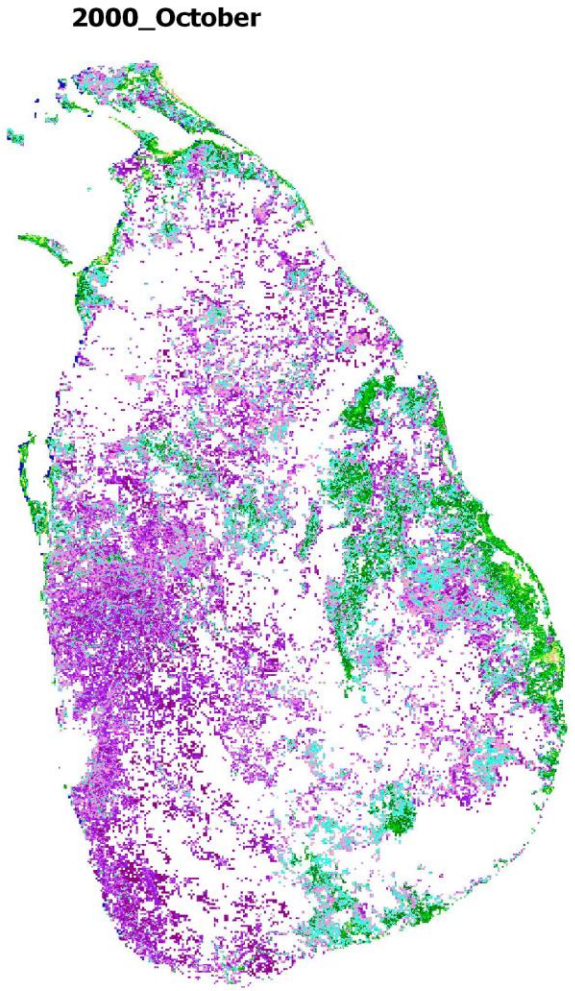
- Arthur C. Clarke Institute for Modern Technologies (ACCIMT) is driving as the national focal point of the project.

- **Drought Monitoring System (DMS) – India**

- MOD13Q1 (Vegetation Indices 16-Day L3 Global 250m)
- AWiFS (Advanced Wide Field Sensor – Resourcesat1 , 56m, 5 days)

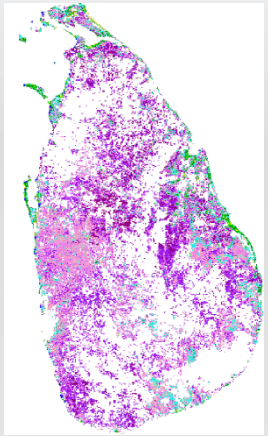
- **Drought Watch – China**

- MODIS 1b data -MOD021KM, MOD03 Daily ,1KM
- HJ1A/B (Huan Jing – Environment) data – 30m 4 days

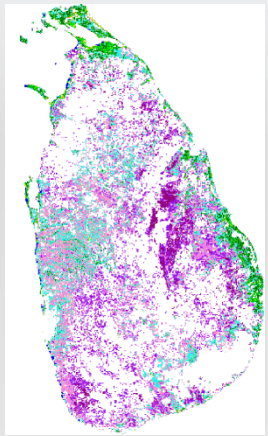


- Vegetation Condition Index (VCI)
- Temperature Condition Index (TCI)
- Vegetation Health Index (VHI)
- Vegetation Supply Water Index (VSWI)
- Normalized Difference Drought Index (NDWI)
- WACI(water area change index)
- Aridity Index (AI)
- Standardized precipitation index (SPI)
- NDVI Anomaly

2015 – MODIS_NDVI



January



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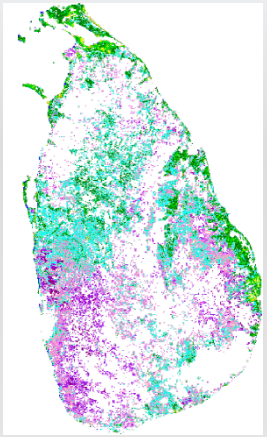

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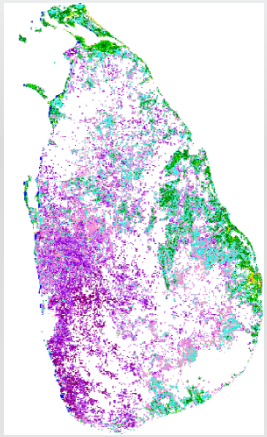
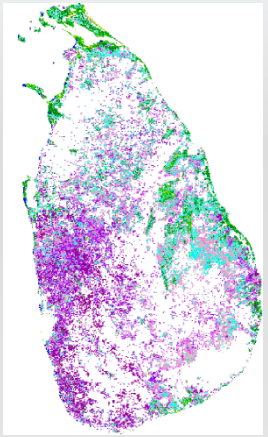
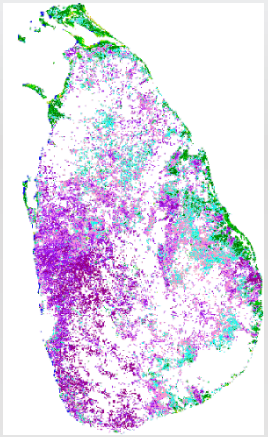


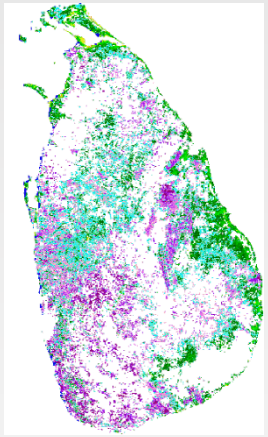
April



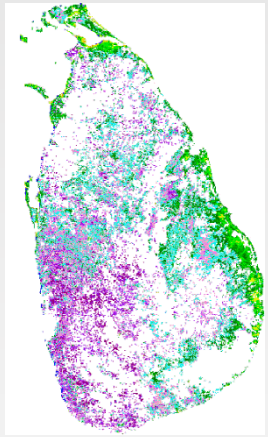
May



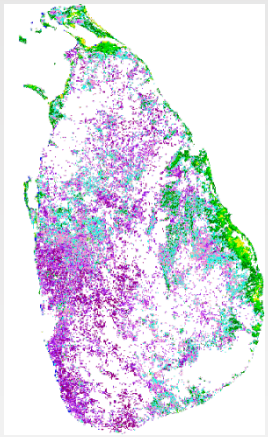
June



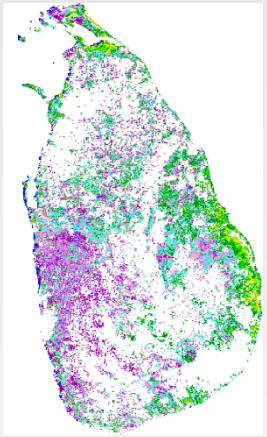
July



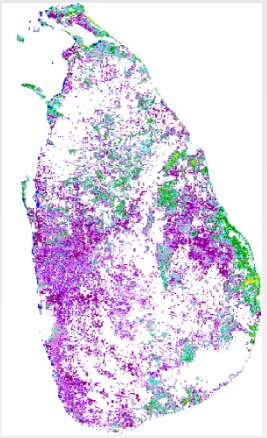
August



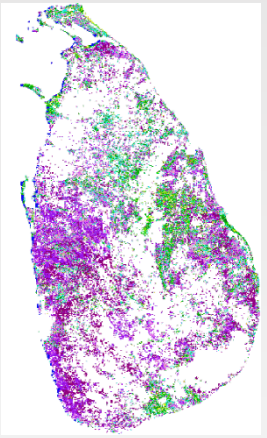
September



October



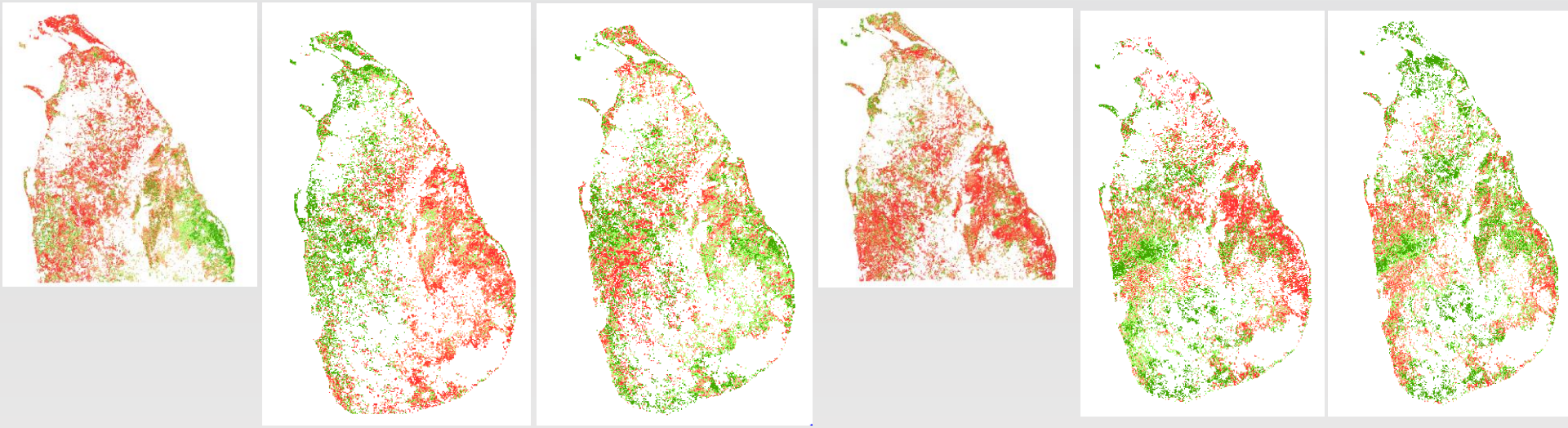
November



December

2015 – AWiFS_NDVI_Anomaly

May June July Aug Nov Dec



Anomaly

- -100 to -40
- -40 to -20
- -20 to -10
- -10 to 0
- 0 to 10
- 10 to 20
- 20 to 40
- 40 to 100

IDENTIFICATION OF SPECTRAL SIGNATURE CHARACTERISTICS OF RICE VARIETIES OF SRI LANKA

Ac 1

Ac 2

Ac 6

Ac 7

Ac 11

Ac 14

Ac 20

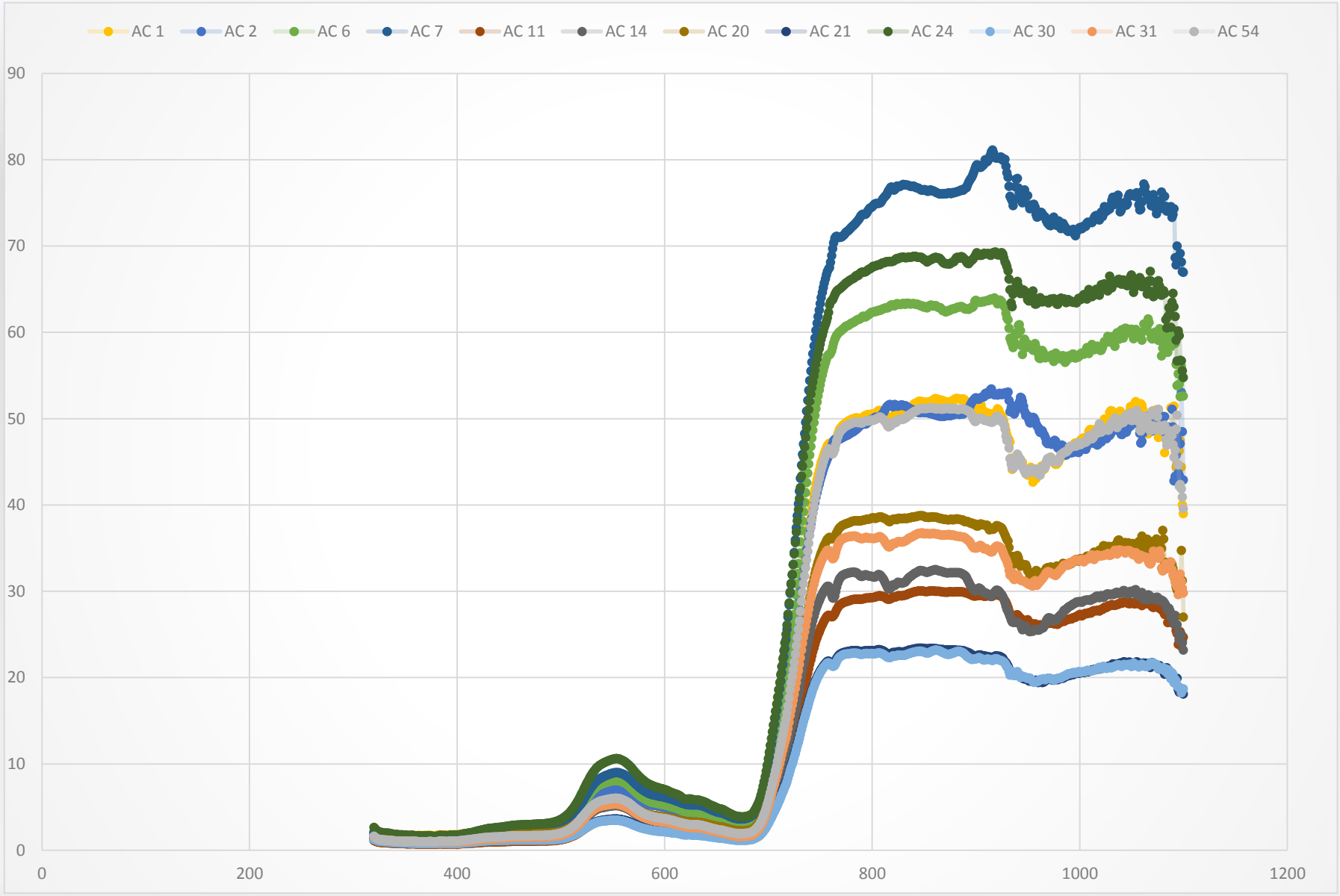
Ac 21

Ac 24

Ac 30

Ac 31

Ac 54



Difference in the reflectance/emittance characteristics with respect to wavelengths (reflectance/emittance as a function of wavelength)

Spectral evalution - PSR 1100 field portable spectroradiometer

29 indices

- **Structural Indices**
- **Chlorophyll/Pigment related indices**
- **Red edge indices**

Python

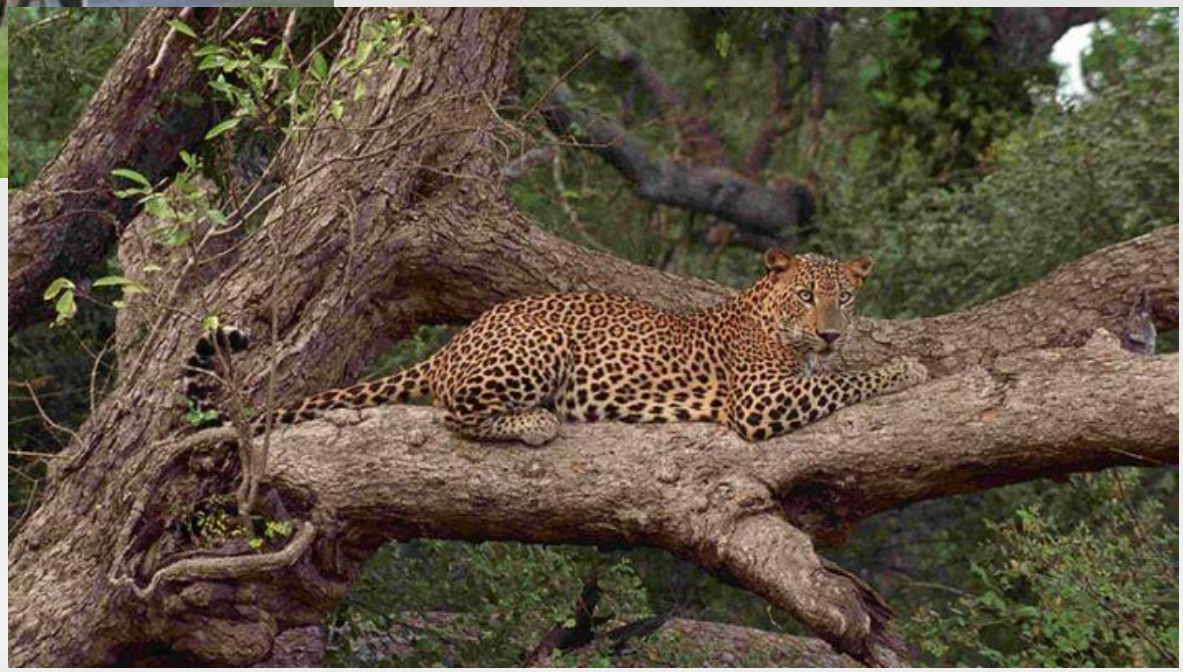
Matlab

“DEVELOPING SPECTRAL SIGNATURE BANK FOR VARIOUS VEGETATION LAND COVERS OF SRI LANKA”

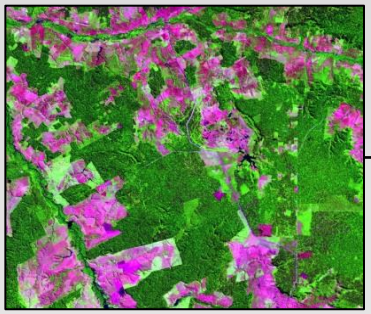
“FOREST COVER MONITORING & MAPPING”

Unique feature

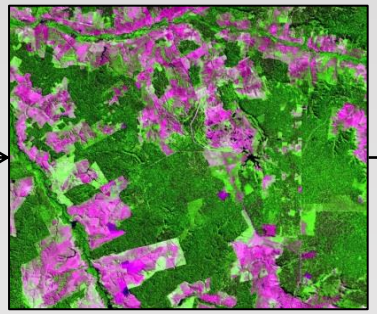
existence of willus (natural lakes -natural sand rimmed water basins or depressions that fill with rainwater)



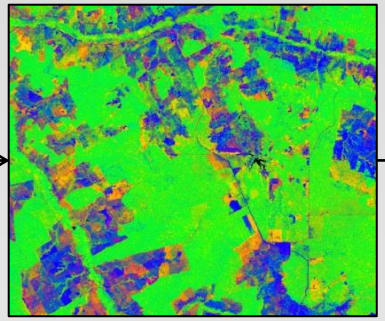
World renowned for its leopard population



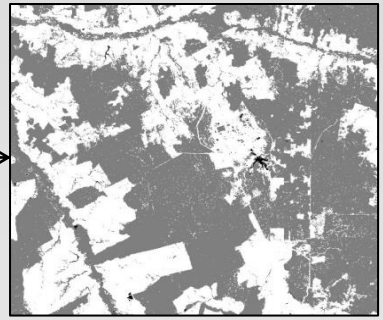
Raw



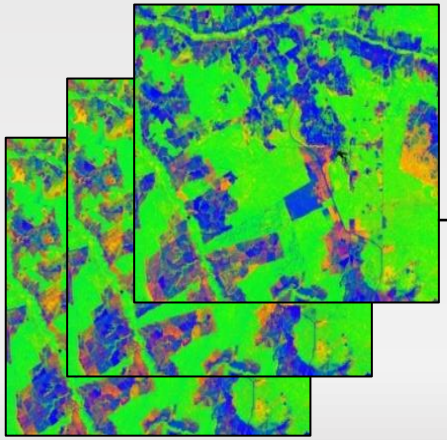
Reflectance



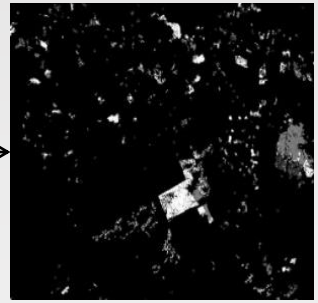
Fractional cover



Forest cover



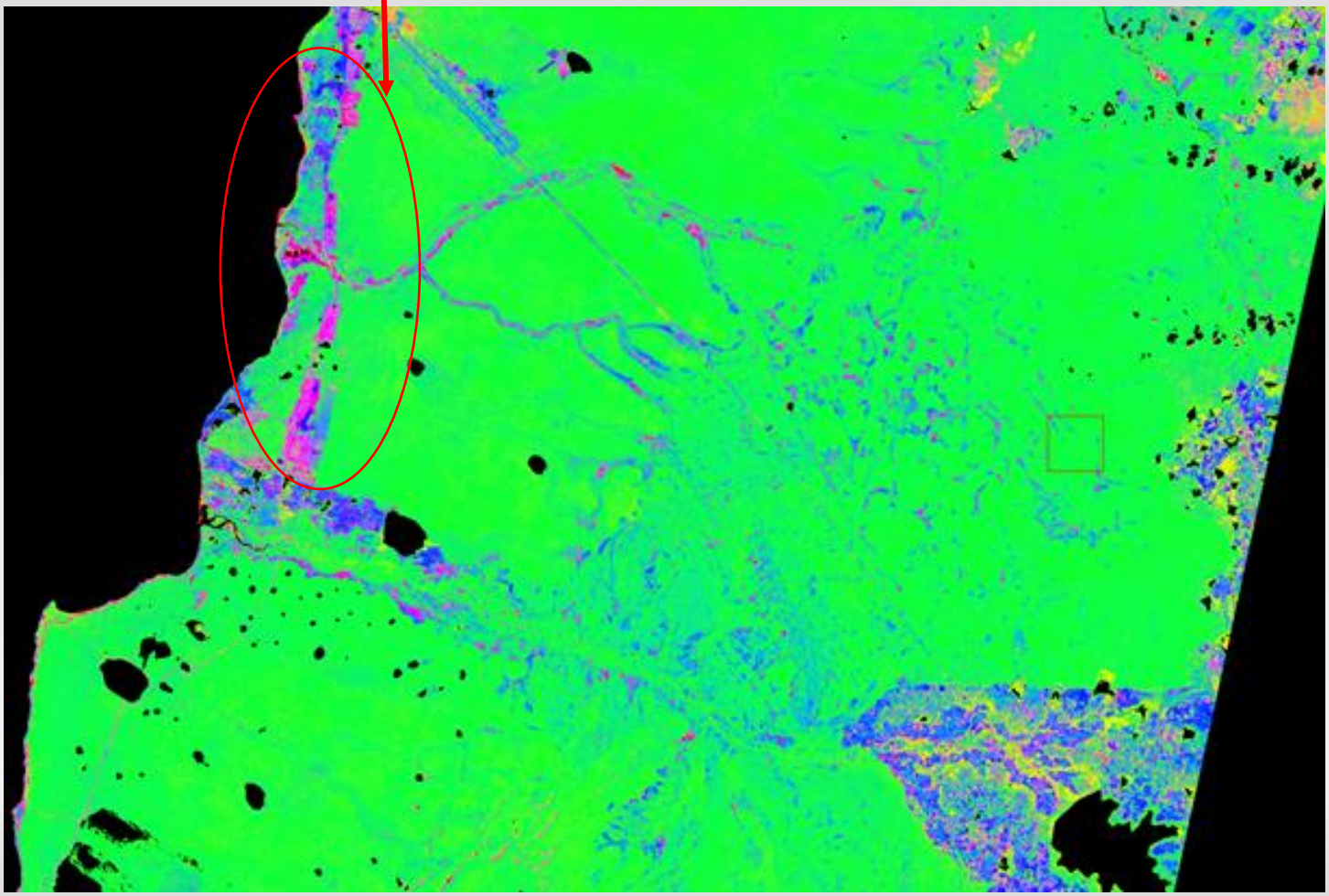
Multiple fractional cover images



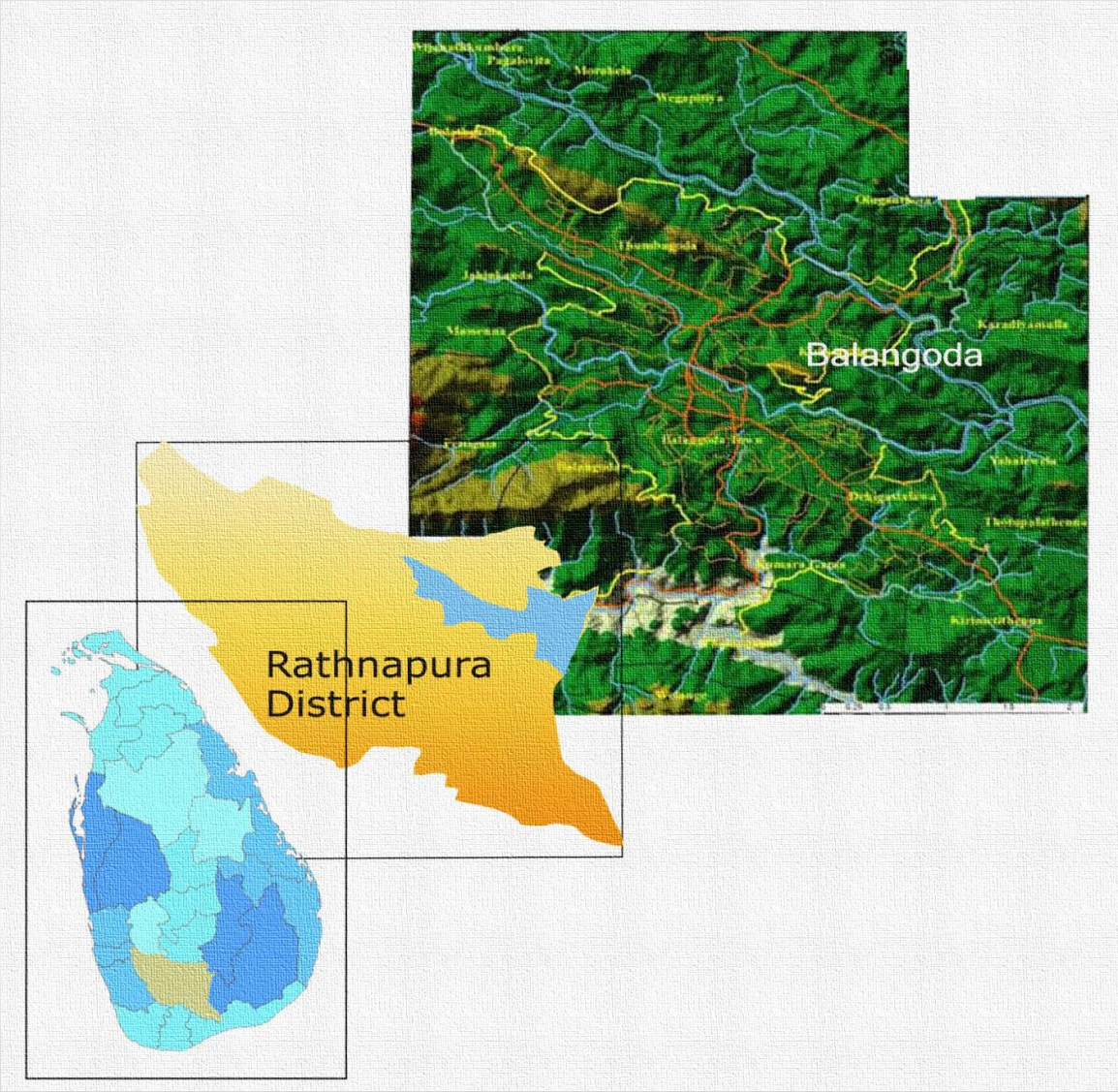
Compiled deforestation

Compiled disturbance

Forest cut extracted using LANDSAT 8 image of 2015.03.20, Wilpattu National Park



“FOREST FIRE RISK ZONATION MAPPING AND IDENTIFYING PREVENTIVE MEASURES”



BALANGODA MAN

Balangoda man refers to hominins from Sri Lankas late quaternary period.

Earliest evidence from of balangoda man from archeological sequence at caves and other sites dates back to 38000bp.

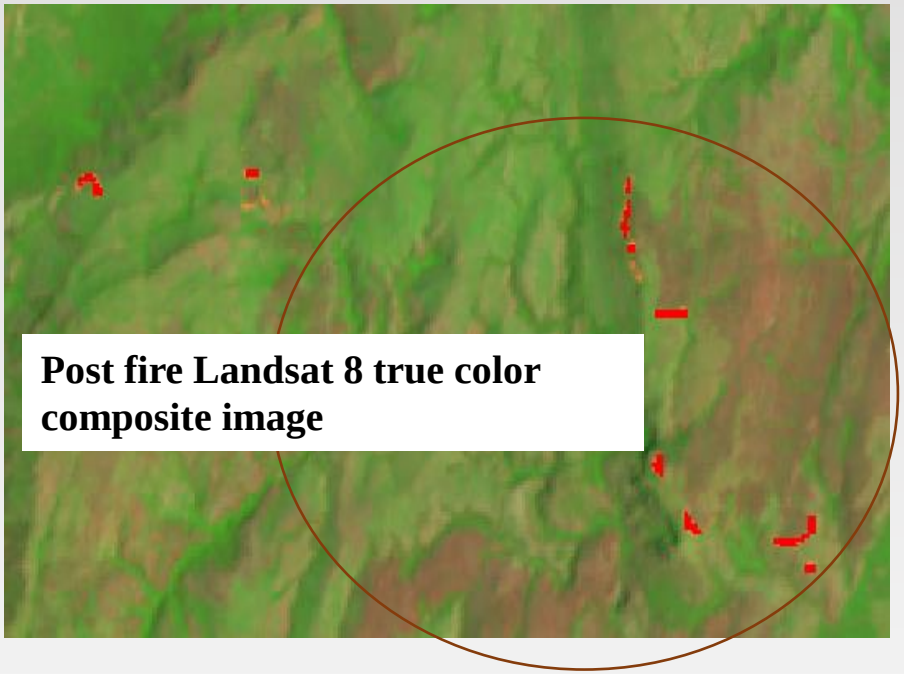
Detection thresholds

<0.27 Unburned

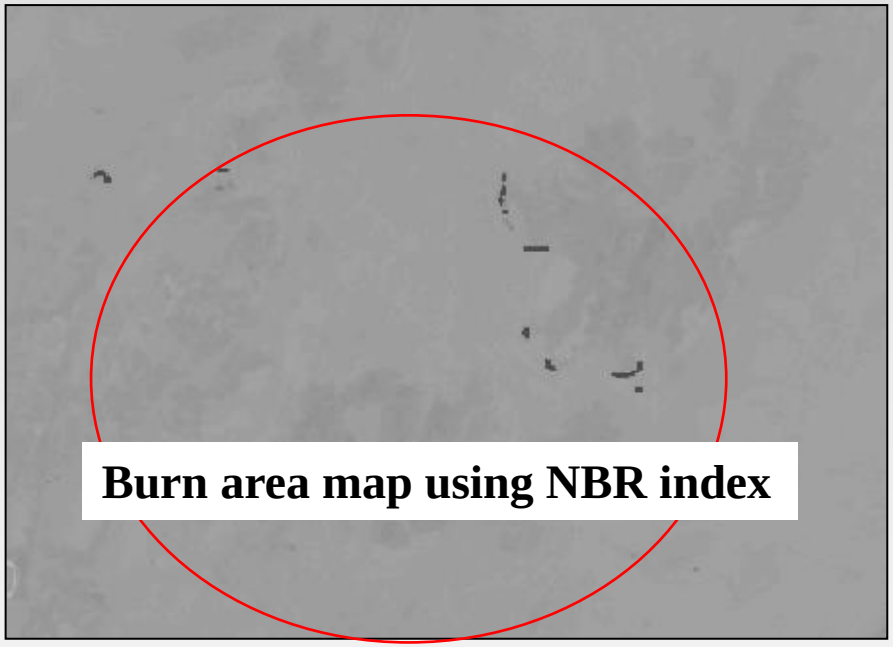
0.27-.44 Law severity Burned

0.44-0.66 Moderate severity burned

0.66-1.20 High severity Burned

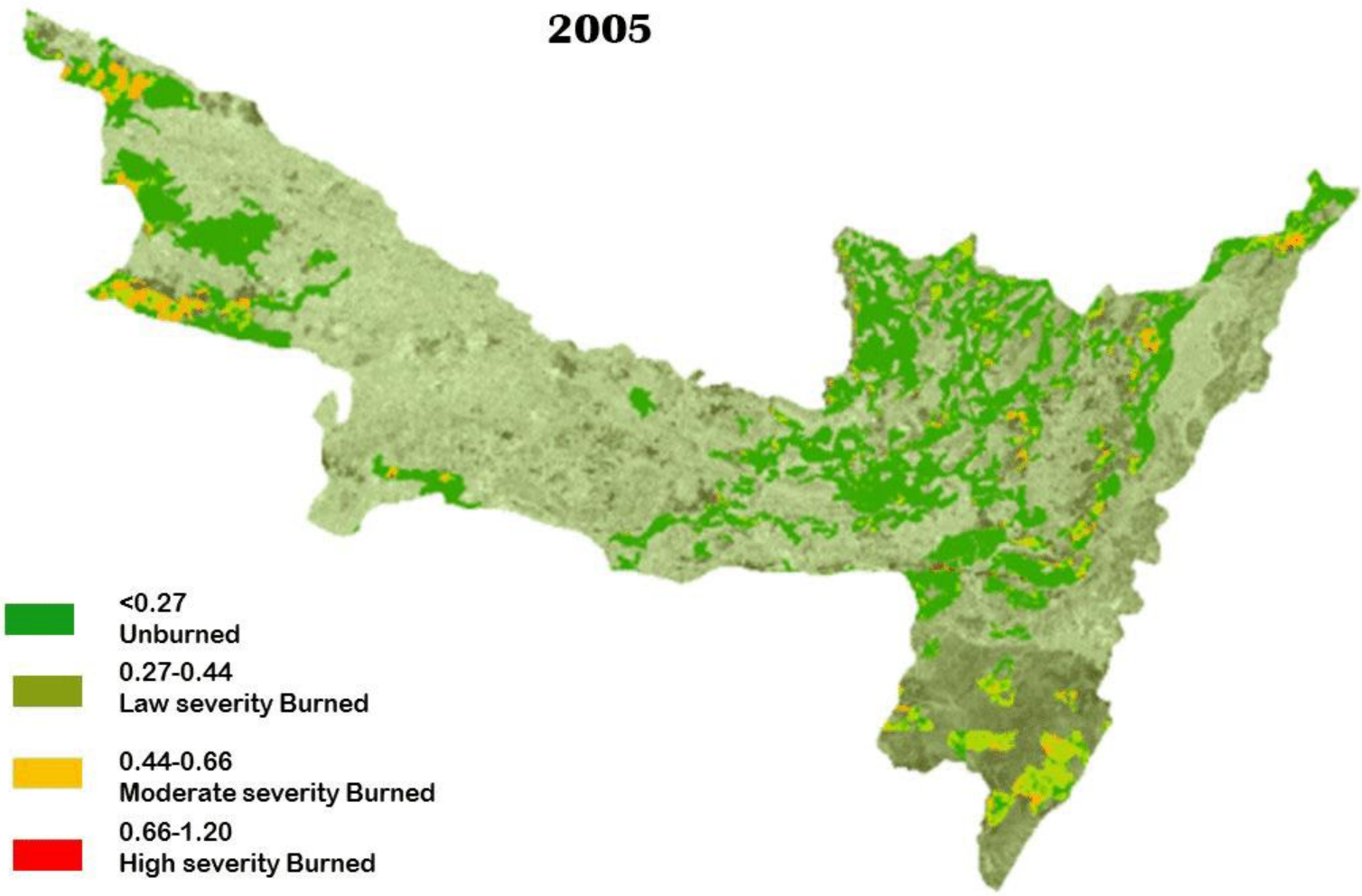


Post fire Landsat 8 true color composite image

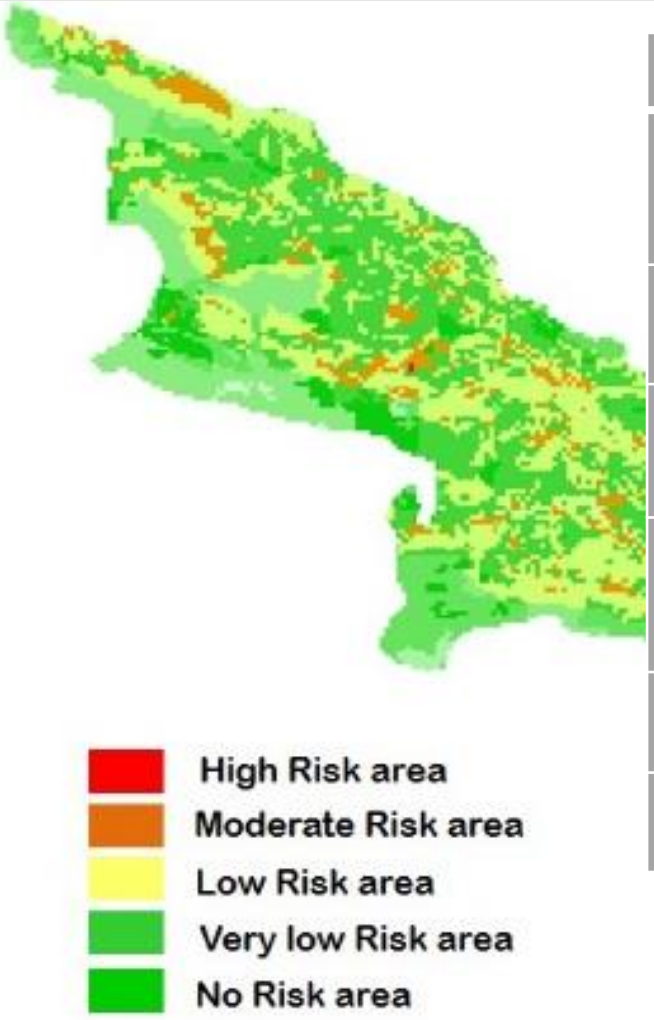


Burn area map using NBR index

Burn area extraction maps



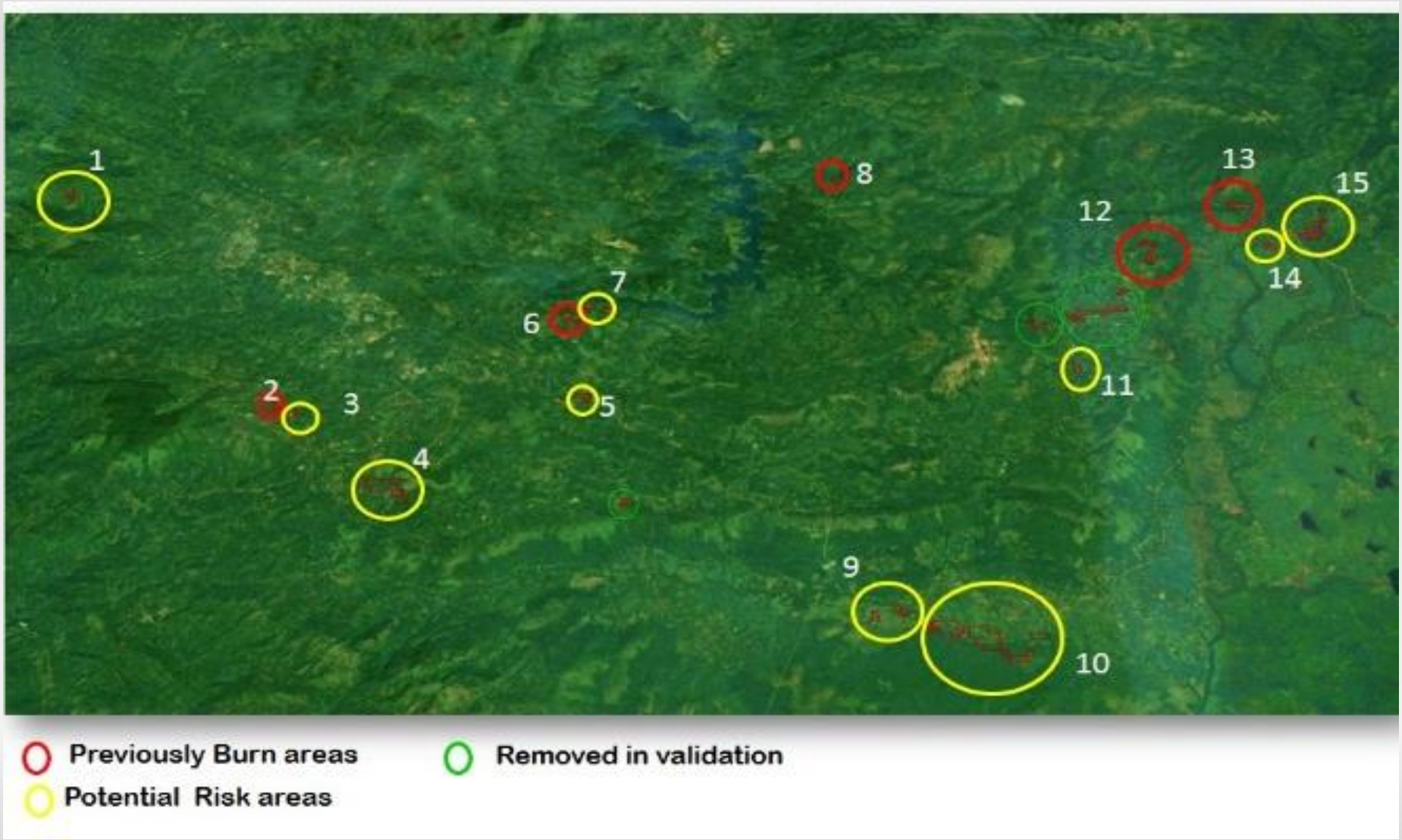
Potential Risk map in Balangoda



Fire Sensitivity	Area (Km^2)	%
Very High	1.364	5.457
High	3.508	14.035
Medium	7.605	30.426
Low	4.484	17.939
Very low	3.034	12.138
No Risk	5	20

VALIDATION

63%



Thank You