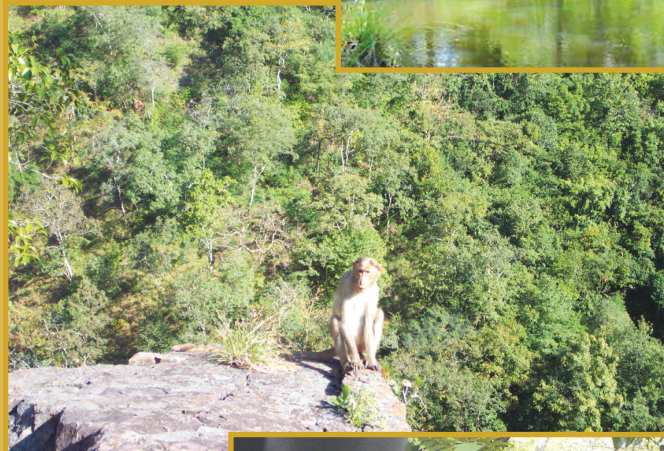
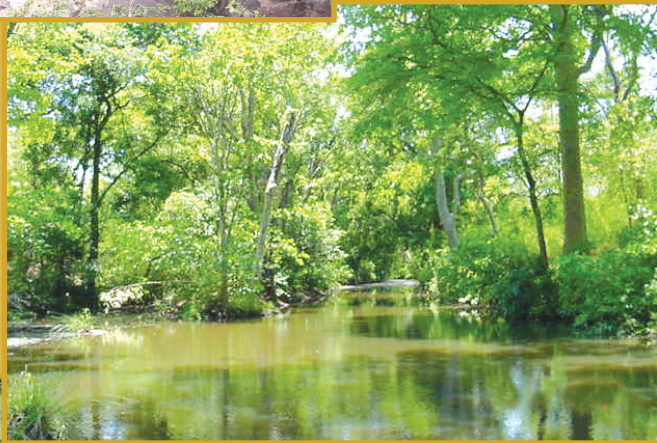


Andhra Pradesh State of Forest Report 2010



**Andhra Pradesh Forest Department
Government of Andhra Pradesh
Hyderabad**



Andhra Pradesh
State of Forest Report
2010



Andhra Pradesh Forest Department
Government of A P
Hyderabad

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State of Forest Report - 2010

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HYDERABAD.

Date..... 14.08.2010



MESSAGE

It gives me immense pleasure to know that Andhra Pradesh Forest Department is bringing out the first report on the status of the forests in Andhra Pradesh, 'State of Forest Report of Andhra Pradesh 2010', based on the interpretation of satellite imageries of 2007 and 2008. Forests are one of the most important life support systems of the Mother Nature and the well being of a region can be best assessed by the status, composition and spread of the forests.

The correct assessment of the status of forests helps in deciding the priorities in planning for improvement of forest cover and in tackling the issues involved in depletion of forest cover.

This Report will help in taking effective measures for safeguarding and improving the existing forest areas and also help in planning for extending the vegetation cover in areas where it is depleted due to various reasons.

The importance of forests in environment protection and betterment of livelihood conditions is well known and the resource mapping can be done effectively if the status of resource is known. The present work will go a long way in achieving this objective.

I compliment the Principal Chief Conservator of Forests and the officials of the IT wing of Andhra Pradesh Forest Department for bringing out his report.


(Dr. P. RAMACHANDRA REDDY) 19/8



Foreword



Millions of years ago, the earth consisted of only water in the form of solid or liquid and forests. Today, with rapid rise in population and modern civilisation, there is destruction of forests which indeed, are a gift of nature. Forests, today, constitute only around 20% of the earth's surface, which is a matter of concern for all of us. Rapid deforestation has resulted in global warming, depletion of ozone layer, increase of carbon compounds in the atmosphere and high diurnal variations of temperature. There is loss of extent of glaciers in Polar region apart from drying of rivers, depletion of water table and soil erosion. Apart from this, there is also a loss of biodiversity and extinction of many animals and plants. There is a global concern now shown to stop cutting of trees and increase the forest cover.

It gives me great pleasure to introduce "The State of Forest Report of Andhra Pradesh-2010" which is an attempt to assess the forest cover of Andhra Pradesh and show the changes between 2007 and 2008 as discerned from LISS-III images of IRS P6 satellite. The Geomatics Centre of the Department has been assessing the forest cover in the notified forests of Andhra Pradesh since 1996. However, this is the first attempt to bring out the results up to the Beat level in the shape of a Report, with more than 80% accuracy, which is highly satisfying. This operation is not a fault finding exercise, but to appraise the field officers, so that the corrective steps are taken for better protection and management of forests. I compliment the entire team led by Sri P.K. Sharma, IFS, APCCF IT, in bringing out this Report. I am sure this will be highly useful to all the field Officers.

C. Madhukar Raj, IFS

Principal Chief Conservator of Forests & HoFF
Andhra Pradesh, Hyderabad

Hyderabad
10-08-2010



Preface



Andhra Pradesh has 63,814 Km² of recorded forests spread over about 3500 forest blocks. It is very crucial to monitor every Hectare of the forest land, whether it is improving or depleting. The synoptic view of satellites provides an opportunity to do that. The LISS-III images of 23.5 meter pixel size of IRS P6 satellite are very ideal to do it.

Forest Cover monitoring is being done in Andhra Pradesh since 1996, using satellite data. Even then, a comprehensive report of the status of forests in Andhra Pradesh was not published earlier. This is the first attempt in that direction.

Earlier to 2007, the forest was classified taking canopy of more than 0.4 density as a single class as dense forests. But in 2007, the forest is classified taking an extra class of VDF and 2008 image is compared to localise the changes. Repeated classification is avoided in the process and only changes are vectorised / polygonised. These changes apart from areas of different classes in 2007 and 2008 are brought out in this report. The broad contents of the report are as given below.

Chapter I deals with an Introduction wherein Andhra Pradesh Forests and History of Geomatics is presented.

Chapter II deals with data used, the procedure adopted for determining changes, advice of Technical Advisory Committee, and limitations of the Technology and Accuracy of the classification.

Chapter III deals with state-wide results and their analysis. It gives areas of different density classes in each division and circle.

Chapter IV gives the division-wise areas under various classes and changes occurring there in between 2007 and 2008. It also gives change matrices for each division.

Chapter V gives an account of changes in Protected Areas.

Chapter VI gives an account of the forests of VSS areas and changes between 2007 and 2008.

The special team of Forest officials at different levels has worked very hard in putting together this publication. It is hoped that this book shall serve the department in managing and protecting the forest more effectively. The team requests the readers to give their reaction about this publication.

Sri P.K. Sharma, IFS,

Addl. Prl. Chief Conservator of Forests (IT)



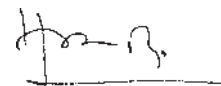
Acknowledgements



The work for State Forest Report 2010 comparing 2008 data with 2007 started during the tenure of Sri C. Siva Shanker Reddy, IFS formerly, Principal Chief Conservator of Forests, A.P. His sincere initiation of the work is acknowledged. Sri P.K.Sharma, IFS APCCF (IT) constantly and continuously monitored the work and encouraged field visits by officers and scientists of Geomatics Wing, without whose cooperation and guidance, this work was not possible.

Sincere thanks are due to the Technical Advisory Committee (TAC) formed by GOAP for advising Geomatics Center in Geomatics Technology headed by Sri P.K.Sharma, IFS, APCCF (IT) and consisting of Dr. H.C. Mishra, IFS, APCCF (GIS), Dr M.S.R Murthy, Head of Forestry Division, NRSC, Dr.M. Reddy, Director General, APSRAC, Sri R.K.Bajpai, IFS, Jt.Director from FSI, Dehradun & Dr.S.V.Reddy, Addl Director, (Scientific-Biosphere Reserves), MoEF. The technical suggestions by TAC, greatly helped the Geomatics Center in assessing the changes accurately. Contributions by Sri P. Sreenivasa Rao, Assistant Conservator of Forests (GIS); Mrs. T. Nagamaneswari and Sri I. Prakash, Assistant Conservator of Forests (Probationers); Sri S. Madhav Rao, Dr A. Rama Murthy, Sri M. Ashok Kumar, Forest Range Officers (GIS); in image analysis and its validation is sincerely acknowledged. Scientists of GIS cell viz. Sri Rajeshwar reddy, Sri K.Bhaskar, Sri Raja Sekhar Reddy, Ms Neeraja, Smt Mallika, Smt Sheeba, Ms Swathi, & Sri Rama Krishna have greatly contributed in image analysis and ground verification in different terrain. Their contribution is sincerely acknowledged. The painstaking efforts taken by Mrs. Santhipriya Pandey, IFS, DCF (GIS), Visakhapatnam for ground truthing works taken up in difficult terrain of Vizag Circle is sincerely acknowledged.

The Present Principal Chief Conservator of Forests Sri C. Madhukar Raj has showed keen interest in the State of Forest Report of AP, which inspired to expedite the work. Lastly, but not the least, the contribution of the entire department field staff, in providing feedback after ground verification and also providing logistic support to the visiting Geomatics Center officers and scientists is sincerely acknowledged.


15-8-10

Dr HC Mishra, IFS

Addl. Prl. Chief Conservator of Forests (GIS)



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Abbreviations

AE	Allowable Error	NAD	North American Datum
AVI	Advanced Vegetation Index	NASA	National Aeronautics and Space Administration (U.S.)
AOI	Area of Interest	NDVI	Normalized Difference Vegetation Index
AWiFS	Advanced Wide Field Sensor	NDWI	Normalized Difference Water Index
BIL	Band Interleaved by Line	NF	Non-Forest
BIP	Band Interleaved by Pixel	NRCAN	Natural Resources Canada
BSQ	Band Sequential	NRSC	National Remote Sensing Centre
CAD	Computer Assisted Design	NIR	Near Infrared
CBD	Convention on Biodiversity	NSDI	National Spatial Data Infrastructure
CFM	Community Forest Management	OF	Open Forest (in terms of Canopy Cover)
CI	Confidence Interval	PDOP	Position Dilution Of Precision
CV	Coefficient of Variation	PA	Protected Area
DBMS	Database Management System	PAR	Photosynthetically Active Radiation
DEM	Digital Elevation Model	PCA	Principal Component Analysis
DGPS	Differential Global Positioning System	PF	Protected Forest
DIP	Digital Image Processing	PPS	Precise Positioning Service
DN	Digital Number	PVI	Perpendicular Vegetation Index
DOS	Disk Operating System	RADAR	Radio-wave Detection and Ranging
dpi	Dots Per Inch	RAR	Real Aperture Radar
DTM	Digital Terrain Model (or Modeling)	RDBMS	Relational Database Management System
EMR	Electromagnetic Radiation	RF	Reserved Forest
ESRI	Environmental Systems Research Institute	RGB	Red, Green, Blue Colour Space
ERDAS	Earth Resources Data Analysis System	RS	Remote Sensing
ETM	Enhanced Thematic Mapper	RTK	Real-Time Kinematic
EVI	Enhanced Vegetation Index	SAR	Synthetic Aperture Radar
FAO	Food & Agriculture Organization	SAVI	Soil Adjusted Vegetation Index
FCC	False Color Composite	SD	Standard Deviation
FOV	Field Of View	SLAR	Side-Looking Airborne Radar
GCP	Ground Control Points	SNR, S/N	Signal to Noise Ratio
GIS	Geographic(al) Information System(s);	SPS	Standard Positioning Service
GPS	Global Positioning System(s)	SRTM	Shuttle Radar Topography Mission
GSDI	Global Spatial Data Infrastructure	SWIR	Shortwave Infrared
HDOP	Horizontal Dilution of Precision	TIR	Thermal Infrared
IFOV	Instantaneous Field Of View	TM	Thematic Mapper
IRS	Indian Remote Sensing Satellite	TSAVI	Transformed Soil Adjusted Vegetation Index
JFPC	Joint Forest Protection Committee	TVI	Transformed Vegetation Index
LAI	Leaf Area Index	UTM	Universal Transverse Mercator Projection
LCC	Lambert Conformal Conic (projection)	VDF	Very Dense Forest (in terms of Canopy Cover)
LISS	Linear Imaging Self Scanner	VI	Vegetation Indices
LULC	Landuse / Landcover	VSS	Vana Samrakshana Samithi(es)
MDF	Moderately Dense Forest (In terms of Canopy Cover)	WGS	World Geodetic System
MODIS	Moderate Resolution Imaging Spectroradiometer (or Spectrometer)	WHS	Water Harvesting Structures
MSS	Multi-Spectral Scanner		





Executive Summary

Background

State Government of Andhra Pradesh in consonance with the National Forest Policy has been placing great importance to the maintenance of the existing forest cover in the State of about 22% and committed to enhance it to 33% of the geographical area through various ameliorating measures. However, the forests are under tremendous pressure of usage by about 20 million people being directly or indirectly dependent upon it for livelihood. Besides demands of development like irrigation projects, laying or improvement of the existing roads and power supply lines, mining of coal and minerals etc. puts additional pressure on the forests.

In this backdrop, scientific assessment and monitoring of the State's forest cover becomes essential for its proper management on sustainable basis. Geomatics Wing of the Forest Department has been systematically and periodically monitoring the forest cover inside the notified forests since 1996 and supplying the out puts to the field officers for chalking better protection strategies and management practices. Though the forest cover of Andhra Pradesh is being monitored since 1996, a comprehensive report of the state of forest in AP was not published earlier. This is the first attempt in that direction.

There has been great advancement in the field of spatial technology in the last decade, hence the Geomatics Centre has been making suitable improvements in the data interpretation and forest cover assessment.



Key Results

Based on the interpretation of the LISS – III data of IRS P6 of November 2007 to January 2008 & November 2008 to January 2009, following are the key results of the 'State of Forest Report of Andhra Pradesh 2010'-

- The state has 950.14 km² of VDF, 18651.72 km² of MDF, 22645.41 km² of Open Forest, 13502.45 km² of Scrub, 7413.51 km² of Non Forest and 651.33 km² of water bodies in 2008. There is a net change of 107.96 km² of forest area (from VDF, MDF, Open Forest, to Scrub forest and Non Forest) between 2007 and 2008.
- Maximum negative change was noticed in Khammam Circle with net negative change of 58.52 km² followed by Rajahmundry Circle with a net negative change of 22.75 km².
- Minimum net negative change of only 0.14 km² was found in Anantpur Circle.
- The net negative change in Joint-Forest Management or VSS areas was found to be 33.16 km².
- In the Protected Areas the net negative change was found to be 2.39 km².
- It was reported that fresh attempts on encroachments had contributed to nearly 65% of the negative changes. Rest of the negative changes are attributed to preparation of forest lands for raising semi-mechanical plantations and rotational felling of eucalyptus and other plantations.
- Adilabad District and Circle tops the list with maximum area under VDF category, which is 501.31 km² out of 950.14 km² in the state; and also for the MDF which is 3834.95 km² in the district.
- All change points, upto Compartment level, with co-ordinates including change of classes, have been put up on the department's GIS website www.apfdgis.com. It was made available to field staff within 6 months of the procurement of Imageries. ●





Chapter - I Introduction

1.1 About the state

Andhra Pradesh is the fourth largest state in India, geographical area wise; with an area of 2,75,068 Km². It is bounded by Maharashtra, Chhattisgarh and Orissa in the north, Bay of Bengal in the east, Tamil nadu in the south and Karnataka & Maharashtra in the west. The state was formed on 1st November 1956, when states were re-organised on linguistic basis by Government of India.

The state of Andhra Pradesh has a population of 76.21 million (2001 census) which is 7.41% of country's population. Nearly 73% of the population of the state is rural, which primarily depend on agriculture for their livelihoods. Scheduled castes constitute about 16% and Scheduled tribes about 6% of the population. Hyderabad, Visakhapatnam and Vijayawada are the principal cities in the state with over a million population. Traditionally, the state is divided into three regions called Coastal region consisting of the nine coastal districts, Telengana region consisting of 10 erstwhile Hyderabad districts and Rayalseema region consisting of 4 districts.

1.2 History of Geomatics in AP Forest Department

A small GIS Unit was set up in the year 1994, under the World Bank funded Andhra Pradesh Forestry Project. FAO was given a consultancy for this item of work and Dr KD Singh was the principal consultant. Initially, the Geomatics activity was started on 386 Personal Computers with 80 Mb Hard disk and 1 MB RAM in a small room in the old Aranya Bhavan. The first package installed, was the IDRISI package donated by the FAO. Very soon, in the same year, one PC Arc/Info (version 3.4.2) running on DOS operating system, was also donated by FAO, for creating state vector data base on 1:250 K scale. The state database was ordered for digitisation by a tender process in November- December 1994 and work was allotted to a company called "Remote Sensing Instruments" for digitising forest block layer, administrative boundary layer, river and water body layer, Village and road layer and vegetation density layer (FSI interpreted) with attributes. The layers were generated by the end of 1995 and later ERDAS packages and PC Arc Info version 3.4.2 were procured. Later in 1996, the Geomatics centre was moved into a larger room on the ground floor of PCCF's office, where it functioned till 2000. The APFD had procured ERDAS 8.2 version, Arc/Info NT 7.2.1 & Unix 7.1.2 Versions. The plotters for large format printing were also procured. The Centre was later shifted to the premises of Andhra Pradesh Forest Academy, Dullapalli on the outskirts of Hyderabad. Meanwhile, 3 Regional Geomatics centers were established at Rajahmundry, Warangal and Kurnool in 1998-99, to cater to the needs of the three regions of the state. Later 3 more regional Geomatics centres were set up at Tirupati, Visakhapatnam and Adilabad, taking the total number to 6. In 2007, the Geomatics Centre was brought back to the newly constructed PCCF's office, "Aranya Bhavan", where it is located now.

Apart from the seven themes created on 1:250K scale on outsourcing basis, about 50 basic and derived themes have been created/generated on 1:50K scale, mostly in-house. This data is distributed to Divisions for verification and use. This data is being used in several applications like Site Suitability Analysis for WHS (awarded with Golden Icon in 2005 by Government of India), Forest Fire Risk Mapping (awarded with Silver Icon in 2004 by Government of India), Selection of Suitable sites for relocation of Blackbucks, etc.

Initially, one handheld GPS of 6 channels was procured in 1996 and later single frequency Trimble DGPS were procured in 1998 with 3 fixed stations and 12 rovers for the whole state. When these machines became old and outdated, 11 new DGPS of SX Blue II model were procured with new PDAs in 2008 and used for DGPS survey using internet corrections available from NRCAN. The APFD has now 10 ERDAS packages, 6 Arc GIS packages,



60 Arc View packages apart from packages like Map Info, e-Cognition etc. The APFD now has also about 1000 handheld GPS instruments of different make which are extensively used in the Surveying & Mapping and Navigating to the locations in the field. The APFD has been continuously upgrading its hardware and software in tune with the advancements in the Technology.

1.3 Forest cover Monitoring in AP

It was FAO which first initiated the forest cover monitoring in Andhra Pradesh during 1995. Mr Rudi Drigo, FAO consultant, first demonstrated forest cover change assessment of Adilabad district taking IRS IA/IB LISS II images of 1988 and 1994. He employed a method called "Interdependent Visual Interpretation" which the FAO had used for various countries in the world. The results were published for all the six divisions of Adilabad district in 1995-1996. Later, forest cover monitoring was undertaken regularly from 1999 when IRS IC and IRS ID LISS III data of 1996 and 1998 were used. The task was given to private companies, who digitally interpreted the densities of the forests and submitted the results to the forest department. The notified forests were classified into Water bodies, Blanks/Others, Scrub (0 to 10% canopy), Open forests (10 to 40% canopy) and Dense forests (>40% canopy) in line with FSI classification. After this, the forest cover was classified regularly by the Geomatics wing every year using digital interpretation methods of LISS III data from 2000 to 2006. The classified data is being communicated to field for validation, the necessary corrections were made, statistics were generated by eliminating 0.5 ha area and results were published. The statistics were communicated to the field officers. A tabular statement of the work done is as follows:

(Area in Ha)								
Sl No.	Year of data used	Data used	Method used	Dense Forest (> 40% canopy)	Open forest (40 to 10% canopy)	Scrub (10 to 0% canopy)	Blanks/ Others	Total
1	*1996	IRS IC/ID LISS-III, 23.5 m	Supervised Classification	10,30,270	18,03,331	25,68,480	9,34,770	63,36,851
2	*1998	IRS IC/ID LISS-III, 23.5 m	Supervised Classification	11,37,087	21,08,254	23,62,395	7,29,225	63,36,961
3	2000	IRS IC/ID LISS-III, 23.5 m	Un supervised Classification	13,18,321	22,46,780	22,44,668	5,23,418	63,33,187
4	2002	IRS IC/ID LISS-III, 23.5 m	Unsupervised / Supervised Classification	14,06,841	24,41,978	20,32,320	4,55,126	63,36,265
5	2003	IRS IC/ID, AWIFS, 56 m	Un supervised / Supervised classification	14,91,966	24,43,691	19,98,885	4,00,248	63,34,790
6	2004	IRS P6, LISS III, 23.5 m	Un supervised / Supervised classification	15,39,656	24,12,933	20,11,362	3,74,162	63,38,113
7	2005	IRS P6, LISS III, 23.5 m	Un supervised Classification	16,00,064	24,33,366	19,88,498	3,13,246	63,35,174
8	2006	IRS P6, LISS III, 23.5 m	Un supervised Classification	16,12,188	24,43,067	19,69,374	3,08,110	63,32,739

* Done on Outsourcing basis.

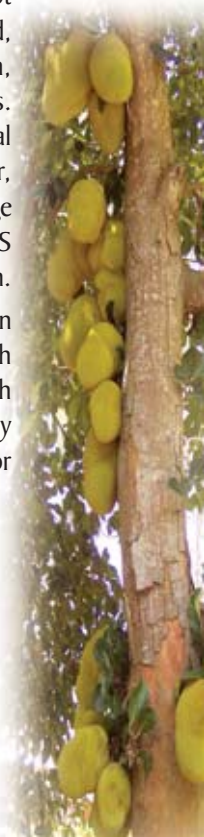
The work of vegetation classification has also been concurrently undertaken by FSI Dehradun on a biennial basis from 1987, onwards for the entire country. The techniques adopted by FSI and the results pertaining to the State of AP are summarised further below:

SI No.	Year of SFR	Data Used (period Sensor, Resolution)	Method used	Forest Cover (>10% Canopy) in Km ²		Accuracy achieved
				Including outside notified forest	Only notified forest area	
1	1987	1981-83, Landsat MSS, 80 m	Visual (1:250K scale)	49573*		–
2	1989	1985-87, Landsat TM, 30 m	Visual (1:250K scale)	47290*		–
3	1991	1987-89, Landsat – TM, 30 m	Visual (1:250K scale)	47290*		–
4	1993	1989-91, Landsat – TM, 30 m	Visual (1:250K scale)	47256*		–
5	1995	1991-93, IRS-IB LISS-II , 36.25 m	Visual and Digital (1:250K scale)	47112*		–
6	1997	1993-95, IRS-IB LISS-II , 36.25 m	Visual and Digital (1:250K scale)	43290*		–
7	1999	1996-98, IRS-IC/ID LISS-III, 23.5 m	Visual and Digital (NDVI) (1:50K scale)	44229*		–
8	2001	1998-2000, IRS-IC/ID LISS-III, 23.5 m	Digital(NDVI) with visual editing (1:50K scale)	44637		95.9%
9	2003	2000-2002, IRS-ID LISS-III, 23.5 m	Digital (NDVI) with Visual editing (1:50K scale)	44419		–
10	2005	2002-2004, IRS P6, LISS –III, 23.5 m	NDVI plus Unsupervised classification aided On screen interpretation (1:50K scale)	44372	38189	92.1%
11	2009	2004 -2006, IRS P6, LISS-III, 23.5 m	Visual (comparison of latest image with previous classification) (1:50K scale)	45102		–

1.4 Refinement of methodology of Forest Cover & change Assessment between 2007 & 2008:

Experience has shown that complete digital interpretation, without input from visual editing, doesn't give a satisfactory level of accuracy. Further, it was noticed that repeated digital classification was prone to interpretational errors and overlaying two classified images didn't give proper change image, at times. It was therefore, decided to use visual editing after classifying the image of 2007, to get a correct interpretation of areas not properly classified by the digital methods. NDVI slicing cum limited visual editing was resorted to for Adilabad, Nizamabad, Medak, Warangal, Karimnagar, Khamam, Nalgonda, Srikakulam, Vijayanagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasham, Nellore, Chittoor, Anantpur and Kurnool districts. However, to check the relative accuracies of various methods, other methods apart from NDVI slicing cum visual editing like Unsupervised classification cum Supervised classification were also attempted in Mahbubnagar, Kadapa, Hyderabad and RangaReddy and better method in terms of final accuracy was taken. The 2008 FCC image was compared with 2007 classified map & 2007 FCC image to discern the changes apart from using the ERDAS matrix tool. The changes were ground truthed by Geomatics wing and communicated to field staff for verification.

Over the years, the digital interpretation of Satellite data had been done independently. As a result, changes in Forest cover were prone to interpretational errors. Therefore, APFD has switched over to Vector based approach like the FSI from 2007, in which forest cover is mapped in polygons (Vector) by defining clusters of pixels with boundaries. This improves the cartographic presentation of the output, helps map the changes more accurately and makes the output available for use by protection staff. Both positive and negative changes were captured for about 1154 locations and communicated to field staff for verification & feedback.





Chapter - II Methodology

2.1 Satellite data and its period

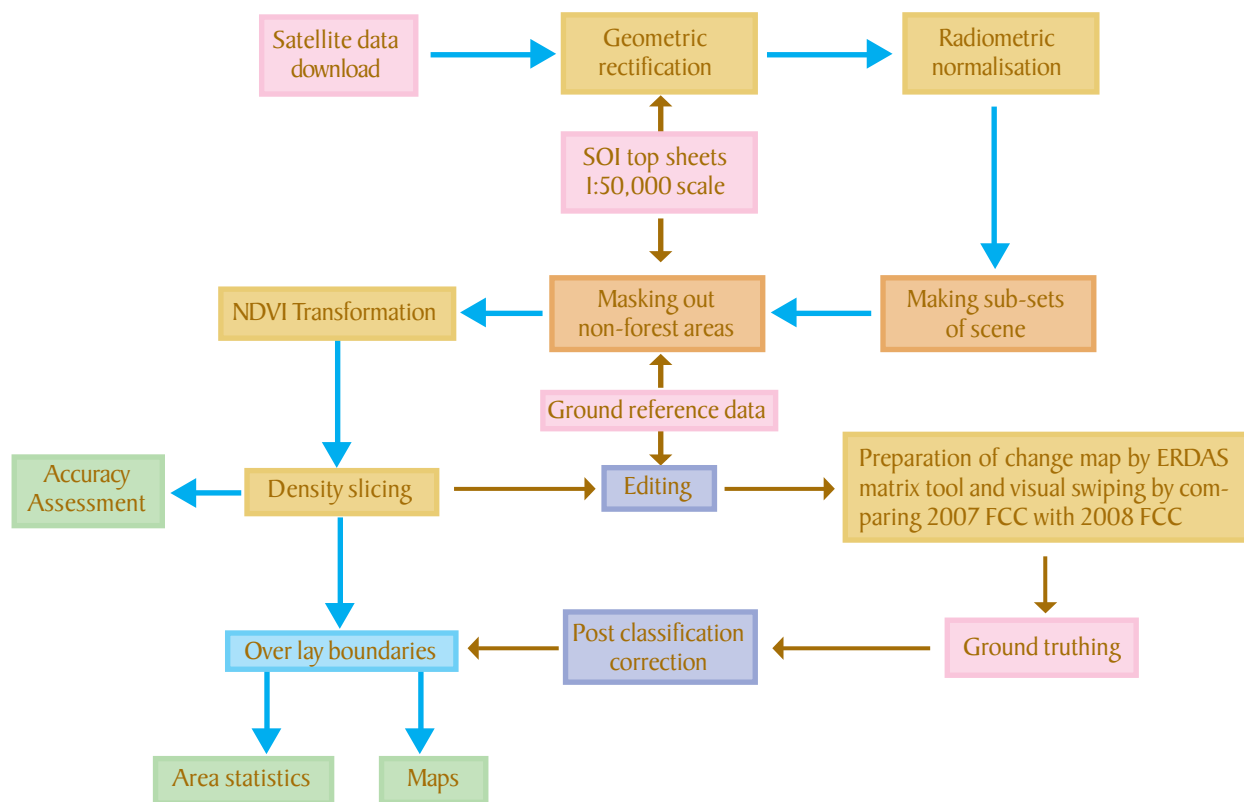
The Satellite data for the entire State was procured from the National Remote Sensing Agency (NRSA), Hyderabad in digital form. It was multi spectral (LISS- III Sensor) data of IRS P6 satellite with a resolution of 23.5m. One scene of LISS – III covers an area of about 20,000 km² (140 km *140 km); there are considerable overlaps (15 to 20 percent) among adjacent scenes. Also, at the borders of the state or for islands, the whole scene has to be procured even though the area of Interest (AOI) may be small. Thus, a total of 30 scenes covering the entire state were procured. The scene-wise details of data procured are as follows:

S.No.	Path/Row (P/R)	Date of pass 2007	Date of pass 2008	Remarks
1	99/58	13-11-2007	7-11-2008	Cloud free
2	99/59	13-11-2007	7-11-2008	..
3	99/60	13-11-2007	7-11-2008	..
4	99/61	13-11-2007	7-11-2008	..
5	99/62	13-11-2007	7-11-2008	..
6	99/63	13-11-2007	7-11-2008	..
7	100/59	25-10-2007	30-12-2008	..
8	100/60	5-1-2008	30-12-2008	..
9	100/61	5-1-2008	30-12-2008	..
10	100/62	5-1-2008	30-12-2008	..
11	100/63	5-1-2008	30-12-2008	..
12	101/59	17-12-2007	11-12-2008	..
13	101/60	17-12-2007	11-12-2008	Partly Cloudy
14	101/61	17-12-2007	11-12-2008	Cloud free
15	101/62	23-11-2007	11-12-2008	..
16	101/63	23-11-2007	11-12-2008	..
17	101/64	23-11-2007	11-12-2008	..
18	102/60	22-12-2007	29-10-2008	..
20	102/61	22-12-2007	29-10-2008	..
21	102/62	15-1-2007	26-2-2009	..
22	102/63	2-1-2007	26-2-2009	..
23	102/64	15-1-2008	26-2-2009	..
24	103/59	27-12-2007	21-12-2008	..
25	103/60	27-12-2007	14-1-2009	..
26	103/61	9-1-2007	03-3-2009	..
27	104/59	14-11-2007	26-12-2008	..
28	104/60	14-11-2007	8-11-2008	..
29	105/59	13-12-2007	31-12-2008	..
30	105/60	13-12-2007	31-12-2008	..



2.2 Image Processing Technique Adopted

The satellite data were rectified using scanned topo sheets on 1 : 50,000 scale and then for all districts NDVI slicing cum editing, unsupervised classification, Unsupervised cum Supervised classification were used to get the classification giving the best result. It was found out that in many cases NDVI slicing cum editing was giving equal or superior result and so for many districts NDVI slicing and editing was adopted. The brief technique adopted for image processing and change detection between 2007 and 2008 is given schematically below:



NDVI slicing demarcating water, Non-Forest, Scrub, Open Forest, Moderately Dense Forest and Very Dense Forest was done in the ground. All the negative NDVI pixels were treated as Water, whereas low NDVI values were treated as Non-Forest. It was noticed that December and January have low NDVI values than that of October and November Scenes. Therefore normalisation of scenes was done when the scenes were of different months. Normalisation of the scenes refers to changing the histogram of a slave image taking another image as a master. It is used for temporally different and spatially coincide images.

After completing the NDVI slicing of the two images, Ground truthing was done and necessary editing to the images carried out. It was seen that NDVI slicing gave accuracy between 72 to 95% without editing, after the two images of 2007 and 2008 were classified. ERDAS matrix tool was used to get the change points. The change points were then digitised on the FCC of 2008 image and the ground truthing of the change points was carried out. It was noticed that the change points tallied in area, location and shape on the ground.

The matrix method, sometimes does not give the location of all the change points. To verify other possible change points, the 2008 FCC and the 2007 FCC were overlaid and by swiping few more change points were detected. All the change points were communicated to the Field officers for verification. The change points were kept in the ARC IMS Server with their attributes for easy verification. About 100 points were checked by the officers of Geomatics Wing and Vigilance Wing. There was good Correlation between the points shown in the lab and the situation on ground.



2.3 Limitations of Technology

The following are the limitations of the technology:

- Since resolution of data from LISS-III is 23.5m, smaller areas below 0.5 ha cannot be captured.
- Young plantations and species having less chlorophyll content in their crown, do not give proper reflectance and as a result correct interpretation of such areas become difficult.
- Considerable details on ground could be obscured in areas having clouds and shadows. It is difficult to interpret such areas without the help of collateral data.
- Variation in spectral response pattern during leafless period poses problems in interpretation.
- Gregarious occurrence of bushy vegetation like Lantana and certain agricultural crops, such as sugarcane, cotton, etc, often pose problems in delineation of forest cover as their spectral response pattern is similar to that of tree canopy.

2.4 Advice of Technical Advisory Committee on change detection:

Government of Andhra Pradesh constituted a Technical Advisory Committee Vide GOMs No.121 EFS & T-(For-III) Deptt. Dated:- 04.12.2009, consisting of following members to aid and advise Andhra Pradesh Forest Department in matters of Remote Sensing & GIS application:-

1. Sri P.K.Sharma, IFS Addl. Prl. Chief Conservator of Forests (IT)
2. Sri Raj Kumar Vajpayee, Deputy Director, FSI
3. Dr. S.V.Reddy, Additional Director, MoEF
4. Dr. M.S.R Murthy, Head Forestry and Ecology Division NRSC.
5. Dr. Mruthyunjay Reddy, DG APSRAC
6. Dr. H.C.Mishra, IFS, Chief Conservator of Forests (GIS)

Accordingly, the Committee met on 11.2.2010 and took the following decisions:-

- a) To address the encroachments and greening changes on annual basis using vegetation index methods.
 - b) To use FSI data for biennial monitoring of Crown density.
 - c) To use LISS-IV & Cartosat merged data for Working plan preparation, Trees outside Forests estimation etc.
- Pursuant to this, Andhra Pradesh Forest Department has produced this report by Vegetation Index (NDVI) method.

2.5 Accuracy Assessment Report

Thematic Information derived from remotely sensed data is important for environmental models at local, regional, and global scales. The thematic information may be in the form of thematic maps or statistics derived from area-frame sampling techniques. The thematic information must be accurate because important decisions are to be made using the information.

Though deriving thematic information from Remote Sensing Data is cost effective, quick and covers inaccessible & large areas, unfortunately, the thematic information contains error. The Analyst shall be able to recognise the sources of the error in this thematic information, shall minimise the errors as much as possible, and inform the user how much confidence he or she should have in the thematic information. Remote sensing derived thematic maps should normally be subjected to a thorough accuracy assessment before being used in scientific investigations and policy decisions.

It is first necessary to clearly state the nature of the thematic accuracy assessment problem at hand, including: What the accuracy assessment is expected to accomplish, the classes of interest (discrete or continuous), and the sampling design and sampling frame.

There are basically 5 common sampling designs used to collect ground reference test data for assessing the accuracy of a remote sensing derived thematic map, viz., Random sampling, Systematic sampling, Stratified random sampling, Stratified systematic unaligned sampling, and Cluster sampling.

In the present assessment, **Stratified Random Sampling Technique** is used. Ground truthing had been conducted to collect the (training sites) to train the RS data. The test reference information (training sets) is collected after the classification has been performed using a random sample to collect the unbiased observations for each Category.

Error Matrix

After the ground reference test information has been collected from the randomly located sites, the test information is compared with the information in the remote sensing derived classification map. Agreement and disagreement

are summarised in the cells of the **Error Matrix** and given in **Table 2.2**. Information in the error matrix is evaluated using simple descriptive statistics and multivariate analytical statistical techniques.

The **overall accuracy** of the classification map is determined by dividing the total correct pixels/points (sum of the major diagonal) by the total number of pixels/points in the error matrix (N). See **Table 2.1**. The error matrix reveals that out of 703 points where observations were made, classification of 595 points was found to be correct and the overall accuracy is estimated to be 84.64%. Further a Simplified Error Matrix was also formed by grouping landuse classes broadly into two classes 'forest' and 'non-forest' and is given in **Table 2.4**. The simplified error matrix reveals that out of 703 points, classification of 656 points was found to be correct and the overall accuracy is estimated to be 93.31%. Besides the overall accuracy, the accuracy of individual categories were computed by calculating the 'producer's accuracy' and 'user's accuracy' or reliability.

The producer's accuracy measures how correctly a certain area has been classified. It is calculated by dividing the total number of correct pixels/points in a category by the total number of pixels/points of that category as derived from the reference data. This statistic indicates the probability of a reference pixel being correctly classified and is a measure of omission error. The more is the error of omission; the lower is the producer's accuracy.

The 'user's accuracy' on the other hand is a measure of reliability of the map. It is calculated by dividing the total number of correct pixels/points in a category by the total number of pixels/points that were actually classified in that category. This measure is the probability that a pixel classified on the map actually represents that category on the ground and is a measure of commission error. The more is the error of commission; the lower is the user's accuracy. The 'producer's accuracy' and 'user's accuracy' for Error Matrix are given in **Table 2.3**. It reveals that the producer's accuracy for VDF, MDF, OF, Scrub, NF and Water classes are 100%, 77.36%, 82.94%, 91.05%, 87.50% and 100%, respectively. It also reveals that the user's accuracy for VDF, MDF, OF, Scrub, NF and Water classes are 100%, 87.23%, 81.32%, 81.22%, 97.67 and 100%, respectively.

The 'producer's accuracy' and 'user's accuracy' for Simplified Error Matrix are given in **Table 2.5**. It reveals that the producer's accuracy for Forest and Non-Forest classes are 92.75% and 94.12% respectively. It also reveals that the user's accuracy Forest and Non-Forest classes are 95.76% and 90.07% respectively.

Results: The results are summarised as follows (Abstract of Accuracy %):

2.1. Overall Accuracy

S. No	District/Division	Accuracy%	Number of Reference Points
1	Srikakulam	90.00	10
2	Vizianagaram	84.21	19
3	Nizamabad	90.00	20
4	Medak	86.36	22
5	Karimnagar	86.84	38
6	Warangal	95.00	40
7	Achampet Division	76.19	42
8	East Godavari	93.18	44
9	Hyderabad	73.91	46
10	Kurnool	91.38	58
11	Adilabad	98.46	65
12	Kadapa	86.67	75
13	Khammam	77.23	224
	STATE	84.64	703

2.2. Error Matrix

Number of points as per Classification	Number of Points as per Field						Total classification
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	3	0	0	0	0	0	3
Moderately Dense Forest	0	123	15	2	1	0	141
Open Forest	0	34	209	13	1	0	257
Scrub	0	2	28	173	10	0	213
Non-Forest	0	0	0	2	84	0	86
Water	0	0	0	0	0	3	3
Total of Field	3	159	252	190	96	3	703

OVERALL ACCURACY % = 84.64



2.3. Producer's and User's Accuracy

	VDF	MDF	OF	Scrub	NF	Water
Producer's Accuracy	3/3	123/159	209/252	173/190	84/96	3/3
Producer's Accuracy %	100.00	77.36	82.94	91.05	87.50	100.00
Error of Omission%	0.00	22.64	17.06	8.95	12.50	0.00
User's Accuracy	3/3	123/141	209/257	173/213	84/86	3/3
User's Accuracy %	100.00	87.23	81.32	81.22	97.67	100.00
Error of Commission%	0.00	12.77	18.68	18.78	2.33	0.00

2.4. Simplified Error Matrix

(Area in Km²)

Number of points as per Classification	Number of points as per Field		Total Classification
	Forest	Non Forest	
Forest	384	17	401
Non Forest	30	272	302
Total Field	414	289	703

Overall Accuracy % (simplified error matrix) =93.31

2.5. Producer's and User's Accuracy (Simplified error matrix)

	Forest	Non Forest
Producer's Accuracy	384/414	272/289
Producer's Accuracy %	92.75	94.12
Error of Omission%	7.25	5.88
User's Accuracy	384/401	272/302
User's Accuracy %	95.76	90.07
Error of Commission%	4.24	9.93

K_{hat} Coefficient of Agreement:

Kappa analysis yields a statistic, which is an estimate of Kappa. It is a measure of agreement or accuracy between the remote sensing derived classification map and the reference data as indicated by a) the major diagonal, and b) the chance agreement, which is indicated by the row and column totals (referred to as marginals).

Computation of K_{hat} Coefficient of Agreement

$$\hat{K} = \frac{N \sum_{i=1}^k x_{ii} - \sum_{i=1}^k (x_{i+} \times x_{-i})}{N^2 - \sum_{i=1}^k (x_{i+} \times x_{-i})}$$

where x_{ii} is the number of observations correctly classified for a particular category (summarized in the diagonal of the matrix), x_{i+} and x_{-i} are the marginal totals for row i and column i associated with the category, and N is the total number of observations in the entire error matrix.

In contrast to the overall accuracy, the K_{hat} also takes into account the non-diagonal elements. It indicates whether the correct values of the error matrix are due to true agreement or due to chance agreement. K_{hat} for the Error Matrix and Simplified Error Matrix are estimated to be 78.81% and 86.29% respectively and considered as statistically sound.





Chapter - III State-wide Results and Analysis

3.1. Introduction

Andhra Pradesh State lies between latitudes 12.623° & 19.917° N and longitudes 76.761° & 84.766° E. The **Geographical Area** of the State is 2,75,068 Km² which is 8.37 % of the landmass of the country and the state has 974 Kilometers of coastline. The State has three **physiographic zones**, the hilly region having Nallamalais and Erramalais hills and the Eastern Ghats having an altitude of 500 to 1400m above MSL; the plateau having an

altitude of 100 m to 1000 m above MSL and the deltas of rivers between the Eastern Ghats and the Sea Coast. Godavari, Krishna and Pennar are the 3 principal **rivers** of the State which drains into the Bay of Bengal. The River Godavari with its tributaries Pranahita, Manjeera, Maneru, Indravati, Kinnerasani, Pamuleru and Sileru drains through the northern parts of the State into Bay of Bengal. The River Krishna with its tributaries Tungabhadra, Vedhavati, Hundri, Musi, Paleru and Munneru flows through the central parts of the State. The River Pennar, the third biggest river, with its tributaries Chitravati, Papaghni, Cheyyeru and Pincha drains Rayalaseema region and Nellore district.

Land use pattern of the State is given in **Table 3.1**.

Table 3.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	275068.00	
Forest including Scrub	56013.50	20.36
Agriculture	168821.46	61.37
Land with Scrub	17137.66	6.23
Fallow Lands	10333.94	3.76
Grasslands	652.17	0.24
Settlements	2633.41	0.96
Vegetation outside Forest	9132.87	3.32
Water bodies	10343.00	3.76

The **climate** of this State is generally dry with **temperature** ranging from 8°C to 52°C and the **annual rainfall** is about 500-1300 mm, received mainly from Southwest and Northeast monsoons.

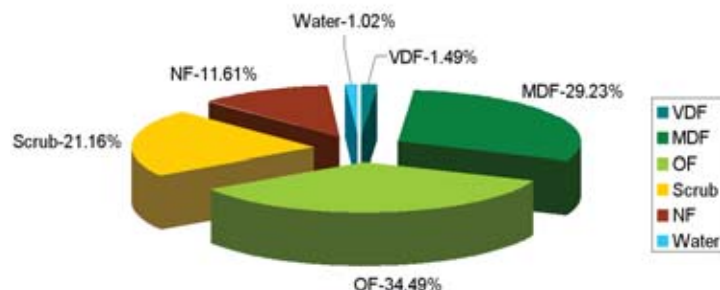
The **geological formations** of the State are: (1) The unclassified Archaean crystalline rocks mainly the granitic, but in eastern ghats comprising granulite suites (khondalites and kodurites), (2) The Middle–Upper Proterozoic the Cuddapahs and its equivalents; (3) The Mesozoic the coal bearing Gondwana strata, (4) Eocene lava flows (the Deccan traps) and (5) The semi-consolidated or unconsolidated tertiary and recent rocks.

The **soils** of the State are Red, Black, Alluvial, Laterite and Saline/Alkaline.

The **population** of the State is 76.21 million (2001 Census). The male population is 38.527 million and female 37.683 million. The Per capita forest area is 0.08 ha. The population density is 277 persons per Km². The livestock population is 150.5 million.

3.2. Recorded Forest Area:

•The total **notified forest area** of the State is 63,814 Km², which is 23.2 % of the geographical area. Reserved-, Protected- and Un-classed forests constitute 50,478.63 Km² (79.10%), 12,365.34 Km² (19.38%) and



969.76 Km² (1.52%) of the total forest area, respectively. • The Khammam District has the highest notified forest area – 8,436.94 Km² and the Krishna has the lowest notified forest area – 664.28 Km² only. However, as regards notified forest to geographical area ratio Khammam District has highest - 52.64 % and Nalgonda has lowest - 5.9 %.

• As per Champion and Seth's classification, the Forests of State fall under Southern Moist Mixed Deciduous Forest, Littoral Swamp Forest, Dry Teak Forest, Dry Red Sanders Bearing Forest, Southern Dry Mixed Deciduous Forest, Dry Deciduous Scrub, Dry Savannah Forest, Hardwickia Forest, Dry Bamboo Brakes, Southern Thorn Forest, Dry Scrub Forest, Tropical Dry Evergreen Forest types.

3.3. Protected Area: The State has 26 Protected Areas – 21 Wildlife Sanctuaries, 4 National Parks and 1 Tiger Reserve i.e. Nagarjuna Sagar–Srisailem Tiger Reserve (NSTR), which is the biggest Tiger Reserve of India. Out of 63814 Km² of notified forest area, 15214.52 Km² is included in the PA network.

3.4. Community Forest Management:

There are 7,718 **Vana Samrakshana Samities** (VSSs) or JFPCs in the State. 15,199.8 Km² forest area, which constitutes 23.8 % of forest area, is under CFM. 1539 thousand members are involved in CFM which includes 465 thousand members belonging to Scheduled Tribes and 323 thousand members belonging to Scheduled castes.

3.5. Forest Cover:

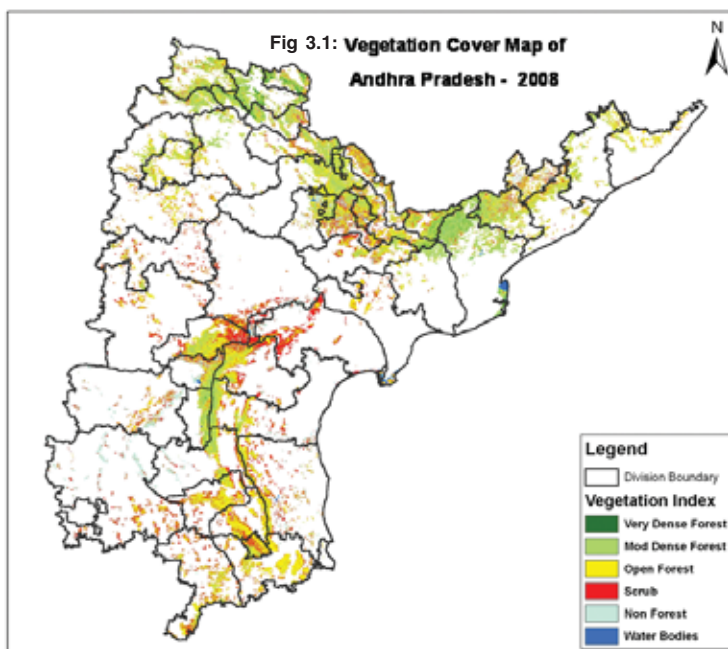
• The **forest cover** in the State based on the interpretation of IRS P6 LISS-III 2008 data (October 2008 to March 2009), is 42247.60 Km², which is 15.36% of the Geographical area. In terms of the forest canopy density classes, the State has 950.14 Km² of Very Dense Forest, 18651.72 Km² of Moderately Dense Forest and 22645.74 Km² of Open Forest. The area of the Scrub is 13502.14 Km², Non-Forest 7413.47 Km² and Water Bodies 651.33 Km². The distribution of the forest cover of the State is shown in **Figure 3.1**.

• **The distribution of Forest Cover in the CFM areas is:** 76.77 Km² in Very Dense Forest, 3,792.38 Km² in Moderately Dense Forest and 5455.74 Km² in Open Forest. The area of Scrub is 3,788.80 Km², Non-Forest 208.65 Km² and Water bodies 47.64 Km².

• **The distribution of Forest Cover in the PA areas is:** 179.99 Km² in Very Dense Forest, 4268.89 Km² in Moderately Dense Forest, 5991.38 Km² in Open Forest, The area of Scrub is 2779.07 Km², Non-Forest 1107.00 Km² and Water bodies 888.18 Km².

• **Comparison** of the current forest cover (Satellite data of October 2008 to March 2009) with that of previous assessment (Satellite data of October 2007 to March 2008), shows a net loss of 107.96 Km² of forest cover. Negative changes were found in 35 Divisions in the State. While positive changes were noticed in 3 Divisions and no change in 8 Divisions. 5 Divisions with most negative changes in terms of area are Paloncha, Khammam, Eluru, Kothagudem and Bhadrachalam N. Kagaznagar, Marlkapur. Rajampet Divisions tops for positive changes. Talking of Circles, net negative changes were noticed in all 12 Circles. Khammam Circle with net negative change of 58.52 km² tops the list followed by Rajahmundry circle with 22.75 km².

• In CFM areas, there is a net loss of 33.16 Km² forest cover. In PA areas, there is a net loss of 2.39 Km² forest cover. The change locations are shown in **Figure 3.2**.



- The forest cover **change matrix**, given in **Table 3.2** reveals that there has been a decrease of 29.72 Km² of moderately dense forest and 78.24 Km² of open forest.
- The Simplified Forest Cover Change Matrix is given in **Table 3.3** and **Table 3.4**.
- On the basis of Ground Truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover are fresh attempts on encroachments triggered by recognition of rights of occupations under RoFR Act, rotational/clear felling of matured plantations and diversion of forest lands under FCA.

Division wise forest cover in different forest canopy density classes along with the changes compared to 2007 assessment is given in **Table 3.9**.

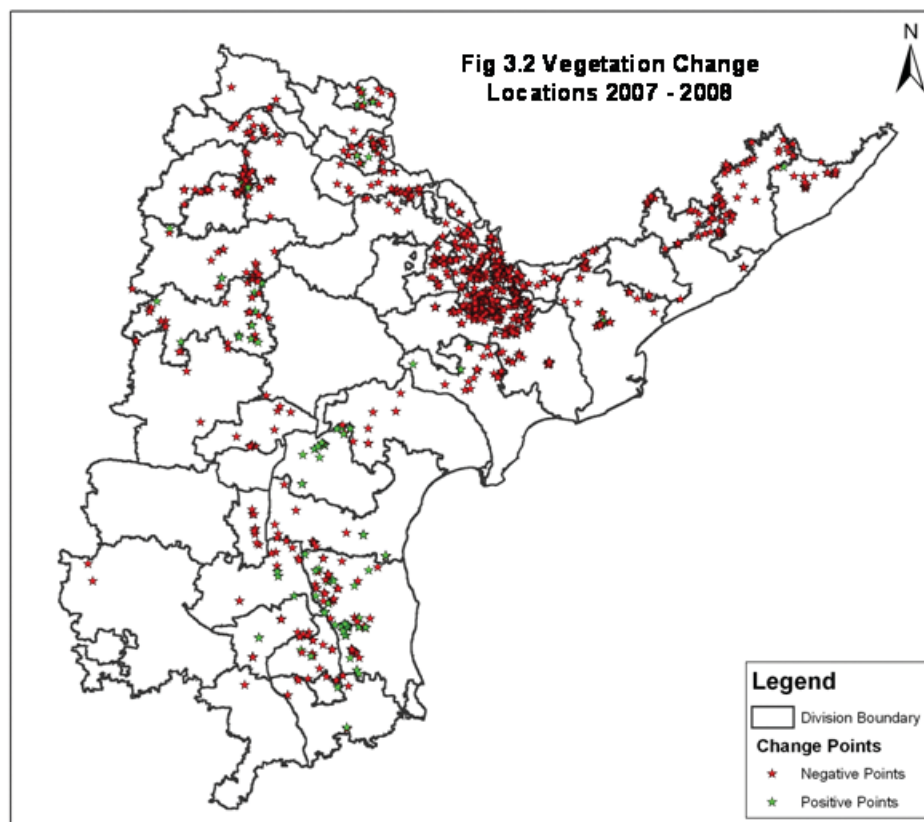


Table 3.2: Forest Cover change matrix

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	950.14	0.00	0.00	0.00	0.00	0.00	950.14
Moderately Dense Forest	0.00	18651.29	0.49	8.43	21.23	0.00	18681.44
Open Forest	0.00	0.23	22638.12	23.38	61.84	0.43	22724.00
Scrub	0.00	0.20	3.53	13465.61	18.97	0.00	13488.30
Non-Forest	0.00	0.00	3.62	4.72	7311.42	0.00	7319.76
Water	0.00	0.00	0.00	0.00	0.00	650.90	650.90
Total of 2008	950.14	18651.72	22645.76	13502.14	7413.46	651.33	63814.55
Net Change	0.00	-29.72	-78.24	13.84	93.69	0.43	



Table 3.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	42240.27	114.88	0.43	42355.58
Degraded Forest	7.35	20800.72	0.00	20808.07
Water	0.00	0.00	650.90	650.90
Total of 2008	42247.62	20915.60	651.33	63814.55
Net Change	-107.96	107.53	0.43	

Good Forest includes VDF, MDF and OF; degraded forest includes Scrub and Non-Forest

Table 3.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007 – Feb 2008)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	55741.42	102.04	0.43	55843.89
Barren	8.35	7311.42	0.00	7319.76
Water	0.00	0.00	650.90	650.90
Total of 2008	55749.76	7413.46	651.33	63814.55
Net Change	-94.12	93.69	0.43	

Green includes VDF, MDF, OF and Scrub; Barren includes Non-Forest

Table 3.5: Change in All Classes

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	1042	-14754.94	306	-4714.09	56	-272.68
Positive	112	1846.52	60	926.19	10	156.92
Net Change	1154	-12728.42	366	-3787.90	66	-116.76

Table 3.6: Change in Forest Cover (VDF, MDF, OF to SF and NF)

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	881	-11530.93	238	-3434.79	52	-256.29
Positive	40	739.69	14	118.88	1	17.4
Net Change	921	-10791.24	252	-3315.91	53	-238.89

The change from DF to OF and vice versa, as well as Scrub to NF and vice versa, are not considered as changes in the forest cover, because of marginal difference. However, details thereof are furnished here under:

Table 3.7: Changes between DF and OF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	7	-48.12	2	-14.75	0	0
Positive	5	24.38	2	5.43	0	0
Net Change	12	-23.74	4	-9.32	0	0

Table 3.8: Changes between SF and NF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	154	-3025.89	66	-1264.55	4	-17.39
Positive	67	1082.45	44	801.88	9	139.52
Net Change	221	-1943.44	110	-462.67	13	95.24

Table 3.9: Division wise Forest Cover 2008 (Area in Km²)

Sl.No. & Division	VDF	MDF	OF	SCRUB	NF	Water	Total	Net Change*
I. ADILABAD								
1 ADILABAD	52.31	925.86	339.77	381.61	192.07	7.33	1898.95	-0.13
2 BELLAMPALLY	172.82	868.23	244.06	106.84	126.96	5.88	1524.79	-0.24
3 JANNARAM	59.6	433.26	125.89	12.54	8.81	3.63	643.73	-0.04
4 KAGAZNAGAR	159.17	378.69	163.74	74.96	114.14	2.59	893.29	0.77
5 MANCHERIAL	50.23	578.11	281.37	115.2	80.05	10.41	1115.37	-0.75
6 NIRMAL	7.18	650.8	200.73	67.94	92.15	6.37	1025.17	-1.04
Total	501.31	3834.95	1355.56	759.09	614.18	36.21	7101.3	-1.43
II. ANANTHAPUR								
7 ANANTHAPUR	0	0.87	348.72	710.78	884.73	0.5	1945.6	-0.14
8 CHITTOOR WEST	0.03	197.72	963.39	646.05	280.61	2.37	2090.18	0.00
Total	0.03	198.59	1312.11	1356.83	1165.34	2.87	4035.78	-0.14
III. FDPT SRISAILAM								
9 ACHAMPET	0.33	479.11	1032.14	782.23	69.6	59.96	2423.37	-1.69
10 ATMAKUR	5.53	229.08	374.45	259.74	346.94	70.03	1285.77	0.00
11 MARKAPUR	1.93	372.31	951.45	689.11	243.56	14.5	2272.86	0.22
Total	7.79	1080.5	2358.04	1731.08	660.1	144.49	5982	-1.47
IV. GUNTUR								
12 GIDDALUR	22.10	746.57	729.43	445.27	259.89	5.31	2208.56	-0.36
13 GUNTUR	0.00	0.29	347.41	1072.79	342.63	61.68	1824.80	0.00
14 NELLORE	0.00	191.55	957.41	732.16	468.89	29.95	2379.96	-0.65
Total	22.10	938.41	2034.25	2250.22	1071.41	96.94	6413.32	-1.01
V. HYDERABAD								
15 HYDERABAD	0	122.11	216.08	389.48	28.45	2.75	758.87	-1.38
16 MAHABOONNAGAR	0	16.2	291.26	309.22	2.64	0.16	619.48	-0.25
17 NALGONDA	0	9.85	188.98	502.21	179.57	8.54	889.15	0.00
Total	0	148.16	696.32	1200.91	210.66	11.45	2267.5	-1.63
VI. KHAMMAM								
18 BHADRACHALAM N	9.26	378.04	547.74	366.69	130.1	3.74	1435.57	-9.64
19 BHADRACHALAM S	83.57	620.31	373.23	177.21	36.34	3	1293.66	-1.21
20 KHAMMAM	0.41	351.62	524.5	353.76	89.47	2.58	1322.34	-14.36
21 KOTHAGUDEM	0.04	356.54	594.34	448	281.45	3.51	1683.88	-9.90
22 PALONCHA	38.77	418.27	651.2	286.77	124.49	4.02	1523.52	-21.70
23 WLM PALONCHA	1.43	221.04	273.37	125.22	52.57	12.75	686.38	-1.71
Total	133.48	2345.82	2964.38	1757.65	714.42	29.6	7945.35	-58.52



VII. KURNOOL									
24 KADAPA	0.03	164.84	973.55	486.41	89.38	2.32	1716.53	-0.06	
25 KURNOOL	0	0.56	269.09	364.46	565.55	2.89	1202.55	0.00	
26 NANDYAL	40.71	596.1	291.69	68.24	66.29	3.43	1066.46	-2.85	
27 PRODDUTUR	3.58	426.38	552.85	302.7	280.65	8.95	1575.11	-0.04	
Total	44.32	1187.88	2087.18	1221.81	1001.87	17.59	5560.65	-2.95	
VII. NIZAMABAD									
28 KAMAREDDY	0	328.05	489.94	85.17	74.13	4	981.29	-0.80	
29 MEDAK	0	113.14	519.7	288.78	38.7	2.7	963.02	-1.27	
30 NIZAMABAD	0	311.23	313.08	80.19	77.3	5.32	787.12	-1.93	
Total	0	752.42	1322.72	454.14	190.13	12.02	2731.43	-4.00	
IX. RAJAMUNDRY									
31 ELURU	0	515.88	167.01	48.3	41.25	0.59	773.03	-10.94	
32 KAKINADA	203.04	2356.73	221.37	185.97	99.22	169.06	3235.39	-8.29	
33 VIJAYAWADA	0	1.94	287.19	211.76	70.17	73.46	644.52	-3.52	
Total	203.04	2874.55	675.57	446.03	210.64	243.11	4652.94	-22.75	
X. VIZAG									
34 NARSIPATNAM	32.8	1084.87	757.08	244.29	234.38	0.33	2353.75	-0.16	
35 PADERU	1.91	140.21	399.2	234.77	235.32	0.11	1011.52	-0.19	
36 SRIKAKULAM	0	134.83	440.8	101.8	33.94	10.35	721.72	-0.93	
37 VIJAYANAGARAM	0.03	598.07	525.1	61.73	33.92	0.44	1219.29	-4.71	
38 VISAKHAPATNAM	0.15	432.77	527.96	200.53	103.46	1.23	1266.1	-1.39	
Total	34.89	2390.75	2649.79	843.43	641.07	12.46	6572.39	-7.38	
XI. WARANGAL									
39 KARIMNAGAR_E	0	658.16	414.62	259.44	48.33	6.26	1386.81	-2.16	
40 KARIMNAGAR_W	0	501.74	337.26	120.2	13.51	1.78	974.49	-2.12	
41 WARANGAL_N	0	953.99	1016.67	90.66	242.2	6.73	2310.25	-1.77	
42 WARANGAL_S	0	309.49	432.26	73.42	337.2	22.29	1174.66	0.00	
43 WLM WARANGAL	0	219.27	277.79	14.49	25.23	1.77	538.55	0.00	
Total	0	2642.65	2478.6	558.21	666.47	38.83	6384.76	-6.05	
XII. WLM-TIRUPATI									
44 CHITTOOR EAST	0.02	114.71	1329.56	364.90	191.67	0.45	2001.31	-0.70	
45 WLM TIRUPATI	3.16	86.64	405.16	194.85	22.10	2.41	714.32	0.00	
46 RAJAMPET	0.00	55.71	976.17	363.30	53.85	2.91	1451.93	0.06	
Total	3.18	257.06	2710.89	923.05	267.62	5.77	4167.56	-0.64	
Grand Total	950.14	18651.74	22645.41	13502.46	7413.91	651.34	63814.99	-107.96	

*Net Change in Forest Cover Only i.e., VDF, MDF and OF to Scrub and Non-Forest between 2007 and 2008





Chapter - IV
Forest division-wise results



Forest Wealth of Andhra Pradesh



Beautiful Birds at Kolleru Wildlife Sanctuary



Teak Mixed Forests of Adilabad
Natural Forest of East Godavari



Forests of Giddalur

1. Adilabad Division

Adilabad Circle

Introduction: Adilabad Forest Division lies in Northern Part of Adilabad District, between latitudes 19° 9' 50" and 19° 54' 59" N and longitudes 78° 7' 28" and 79° 5' 37" E. The **Geographical Area** of the Division is 4409.41 Km², which constitutes 27.34 % of the total area of the District. The **highest hill ranges** are situated in the southeast corner of the Division. They are Kuchanpally 646m above MSL, Tummidipally gutta 634m. The important **rivers** of the Division are Kadam River, Penuganga and Peddavagu which are tributaries of Godavari. **Land use pattern** of the Division is given in **Table 1.1**.

The climate of the Division is characterised by hot summer and is generally dry; except during the south-west monsoon season. The **temperature** varies from 8°C to 47°C. The **average annual rainfall** of the Division is 1051 mm, received mainly from south-west monsoons.

The **soils** vary with underlying rock formation. Black cotton soils, Cahlka and Red soils, Sandy loams, Saline and Alkaline soils. The District is well endowed with rich reserves of coal, iron ore, lime stone and clays.

The total **population** of the Division is 0.65 million (2001 Census). The per capita forest area is 0.28 ha. The population density is 148 persons per Km².

Table 1.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	4409.41	
Forest including Scrub	1699.55	38.54
Agriculture	2153.17	48.83
Land with Scrub	293.57	6.66
Fallow Lands	84.42	1.91
Grasslands	0	0.00
Settlements	20.03	0.46
Vegetation outside Forest	108.2	2.46
Water body	50.47	1.14

Recorded Forest Area: The **total notified forest** area of the Division is 1830.35 Km², which is 41.51 % of the total geographical area. Reserved, Protected and Unclassed Forests constitute 996.47 Km² (54.45 %), 820.32 Km² (44.8%) and 13.56 Km² (0.7%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous & Bamboo Mixed Forests (Dry Teak bearing Forests, Dry Mixed Forests).

Protected Area: There is no Protected Area in the Division.

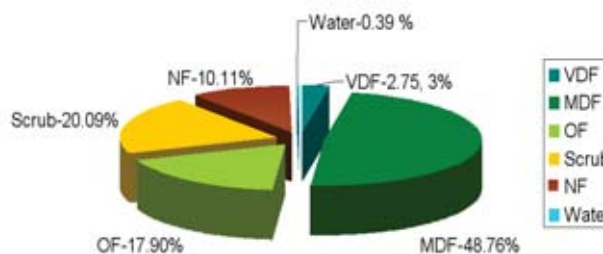
Community Forest Management: There are 390 **Vana Samrakshana Samities** (VSSs) in the Division. An area of 359.34 Km² forests, which is 21.06 % of the notified forests, is under the management of the VSSs.

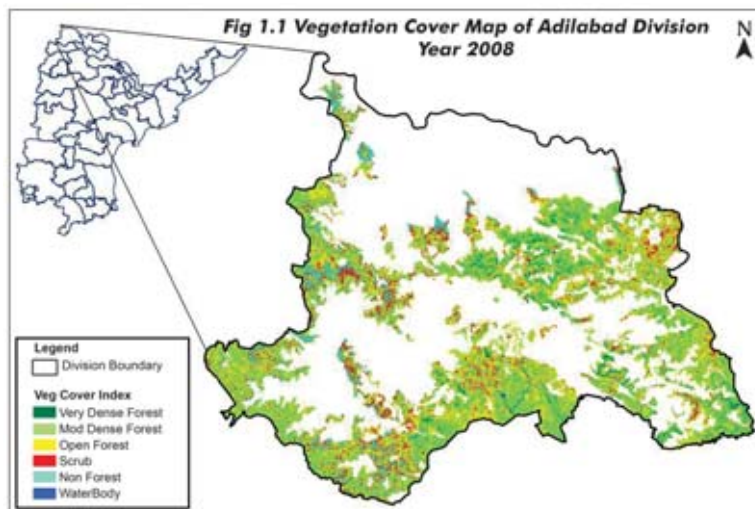
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 1317.94 Km², which is 29.89% of the total Geographical area. In terms of the forest canopy density classes, the Division has 52.31 Km² of Very Dense Forests, 925.86 Km² of Moderately Dense Forests, and 339.77 Km² of Open Forests. The area of the Scrub is 381.61 Km², Non-Forest 192.07 Km² and Water Bodies 7.33 Km². The distribution of the forest cover of the division is shown in **Figure 1.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows: 1.1894 Km² in Very Dense Forest, 106.83 Km² in Moderately Dense Forests & 14.247 Km² in Open Forests. The area of the scrub is 34.41 Km², 43.04 Km² is Non-Forests and 0.308 Km² is Water bodies.

- **Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Oct 2007 - Nov 2007), shows a net loss of 13.17 Ha forest cover during the period of one year.

- The **change matrix**, given in **Table 1.2** reveals that there has been a decrease of 0.13 Km² of open forest.





- The **simplified forest cover change matrix** is given in **Table 1.3** and **Table 1.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is encroachments.
- There are **75 Beats** in the Division. Negative change in Forest Cover is seen in 2 Beats, and no change in 73 Beats.
- Beat wise forest cover in 2008, in different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment is given in **Table 1.5**.

Table 1.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	52.31	0.00	0.00	0.00	0.00	0.00	52.31
Moderately Dense Forest	0.00	925.86	0.00	0.00	0.00	0.00	925.86
Open Forest	0.00	0.00	339.77	0.13	0.00	0.00	339.90
Scrub	0.00	0.00	0.00	381.48	0.00	0.00	381.48
Non-Forest	0.00	0.00	0.00	0.00	192.07	0.00	192.07
Water	0.00	0.00	0.00	0.00	0.00	7.33	7.33
Total of 2008	52.31	925.86	339.77	381.61	192.07	7.33	1898.95
Net Change	0.00	0.00	-0.13	0.13	0.00	0.00	

Table 1.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

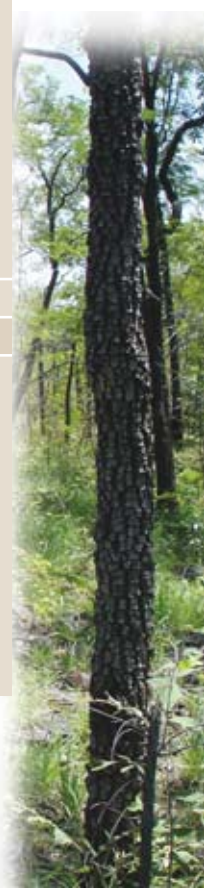
2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1317.94	0.13	0.00	1318.07
Degraded Forest	0.00	573.55	0.00	573.55
Water	0.00	0.00	7.33	7.33
Total of 2008	1317.94	573.68	7.33	1898.95
Net Change	-0.13	0.13	0.00	

Table 1.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1699.55	0.00	0.00	1699.55
Barren	0.00	192.07	0.00	192.07
Water	0.00	0.00	7.33	7.33
Total of 2008	1699.55	192.07	7.33	1898.95
Net Change	0.00	0.00	0.00	

Table 1.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ADILABAD Range							
Ankoli	5325.8	301.09	2051.37	406.6	2759.06	0.00	327.84
Arjuni	3381	70.2	1185.75	445.16	1701.11	0.00	491.65
Arli(n)	6103.01	0.00	34.95	197.28	232.23	0.00	179.03
Arli(s)	4484.32	0.00	217.63	303.63	521.26	0.00	257.12
Bhadi	25697.09	124.11	1520.17	219.93	1864.21	0.00	462.87
Devapur	5376.48	0.00	317.39	129.23	446.62	0.00	91.05
Dhaba	3398.69	15.89	1128.5	502.6	1646.99	0.00	330.7
Downa	3714.93	189.62	2076.43	414.88	2680.93	0.00	153.73
Khandu	6448.89	61.46	1685.79	354.14	2101.39	0.00	1068.1
Kosai	4775.6	0.00	1752.96	488.7	2241.66	0.00	251.92
Kuchlapur	6105.77	0.00	1358.44	448.92	1807.36	0.00	205.07
Masala	10360.96	90.85	1676.57	272.83	2040.25	0.00	231.14
Mavala	6567.4	0.00	633.61	424.63	1058.24	0.00	250.55
Tamsi	27017.67	0.00	228.58	317.79	546.37	0.00	183.87
Tantoli	6687.08	0.00	384.79	329.65	714.44	0.00	582.52
Toyaguda	5889.37	306.5	1735.3	500.56	2542.36	0.00	306.8
Yapalguda	13255.96	28.06	371.73	350.91	750.7	0.00	699.69
Total	144590	1188	18360	6107.4	25655	0.00	6074
BOATH Range							
Arepally	4178.68	1.12	1414.23	612.25	2027.6	0.00	726.67
Boath	9220.82	0.00	1850.16	679.65	2529.81	0.00	244.48
Bondidi	4259.58	0.00	1379.37	488.86	1868.23	0.00	341.6
Boregaon	3346.33	0.00	651.25	651.05	1302.3	0.00	1107.7
Jeedipally	4126.5	0.00	601.77	252.55	854.32	0.00	126.05
Kowta	8030.68	0.00	540.78	351.45	892.23	0.00	800.99
Kuntala	1352.3	0.00	183.58	179.37	362.95	0.00	108.92
Marlapally	7390	0.00	3221.21	1539.22	4760.43	0.00	489.41
Neradigonda	4546.43	0.00	647.94	386.61	1034.55	0.00	681.02
Pardi	2271.57	0.00	391.33	458.08	849.41	0.00	227.75
Pisra	3022.72	18.32	2035.75	429.9	2483.97	0.00	237.77
Sonala	7227.29	0.00	2141.79	1206.56	3348.35	0.00	825.12
Wadoorp	3288.49	0.00	967.74	621.45	1589.19	0.00	426.17
Wagdhari	1903.22	0.00	140.26	105.01	245.27	0.00	429
Wankidi(e)	4011.76	0.00	1534.89	613.93	2148.82	0.00	456.64
Wankidi(w)	3289.43	0.00	1574.27	607.5	2181.77	0.00	370.05
Total	71466	19.44	19276	9183.4	28479	0.00	7599
ECHODA Range							
Bharampur	4331.39	0.00	646.33	513.47	1159.8	0.00	576.95
Bhulai	6914.14	0.00	249.49	234.25	483.74	0.00	236.46
Dedra	5898.75	0.00	2097.94	755.68	2853.62	0.00	782.19
Dignoor	5547.05	0.00	408.22	215.17	623.39	0.00	494.06
Echoda	7335.58	0.00	642.31	196.57	838.88	0.00	271.14
Gairjam	8186.62	5.36	910.88	263.06	1179.3	0.00	506.26
Gudihathnoor	8643.35	0.00	771.21	467.38	1238.59	0.00	737.46
Harkai	3236.3	0.00	605.86	364.88	970.74	-6.03	669.79
Jhari	5922.85	0.00	1329.19	717.24	2046.43	0.00	321.64
Madhapur	3402.45	185.75	866.92	290.25	1342.92	0.00	530.32



Andhra Pradesh State of Forests - 2010

Sirchalma	3557.89	47.69	1976.58	267.58	2291.85	0.00	608.17
Sirkonda	4750.43	22.33	692.87	219.17	934.37	0.00	833.87
Talamadri	5126.42	128.9	1261.82	203.39	1594.11	0.00	671.03
Waipet	2816.95	14.6	1575.57	343.48	1933.65	0.00	600.28
Total	75670	404.6	14035	5051.6	19491	-6.03	7840
INDERVELLY Range							
Chorgaon	7195.73	260.82	1489.76	488.42	2239	0.00	1578.4
Dhanora	9088.4	6.29	269.11	199.65	475.05	0.00	385.1
Indervelly	8899.92	381.74	2165.78	671.45	3218.97	0.00	1081.3
Muthnoor	2294.64	89.59	473.35	108.57	671.51	0.00	304.13
Pataguda	3434.2	174.35	1873.11	342.62	2390.08	0.00	520.35
Pochampally(n)	3536.99	122.19	843.99	375.28	1341.46	0.00	1470.1
Pochampally(s)	3771.52	32.63	1746.66	622.51	2401.8	0.00	1036.1
Sayeedpur	3423.76	317.43	1511.7	448.91	2278.04	0.00	511.22
Shampur	9236.28	85.94	1833.56	785.57	2705.07	0.00	1026.2
Tosham	3627.03	32.73	863.04	193.42	1089.19	0.00	294.22
Wadgaon	7546.47	80.76	777.69	336.18	1194.63	0.00	741.22
Waipet[south]	3646.27	2.75	2582.84	391.36	2976.95	0.00	403.74
Total	65701	1587	16431	4963.9	22982	0.00	9352
UTNOOR Range							
Chinnakohinoor	4297.88	164.83	610	84.91	859.74	0.00	92.86
Daboli	7173.3	168.67	2032.94	815.74	3017.35	0.00	555.09
Gadiguda	1934.11	9.24	613.02	328.72	950.98	0.00	324.07
Ghanpur	3294.72	44.19	692.27	152.64	889.1	0.00	389.39
Gudamamada	5307.6	76.84	1940.73	522.07	2539.64	0.00	661.92
Hasnapur	4934.19	387.81	971.71	242.62	1602.14	-7.14	473.95
Kobbaiguda	7884.21	108.65	392.63	145.78	647.06	0.00	431.07
Limbori	3390.34	19.48	973.33	893.38	1886.19	0.00	469.99
Lokari	5026.26	104.29	948.11	242.6	1295	0.00	291.2
Netnoor	14275.39	576.69	5727.96	1339.55	7644.2	0.00	1682.4
Raghapur	5004.23	129.22	1683.65	275.55	2088.42	0.00	303.98
Rasimetta	4700.82	53.27	1752.22	1024.44	2829.93	0.00	461.98
Sedwai	1905.59	13.93	561.72	331.65	907.3	0.00	342.69
Umri	2912.63	21	1386.3	891.25	2298.55	0.00	306.34
Utnoor	6813.38	133.72	3473.02	938.41	4545.15	0.00	248.65
Yempally	4153.92	20.07	724.6	453.86	1198.53	0.00	247.78
Total	83009	2032	24484	8683.2	35199	-7.14	7283
Grand Total	440436	5231	92586	33990	131807	-13.17	38148

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



2. Bellampally Division

Adilabad Circle

Introduction: Bellampally Forest Division lies in the Adilabad District, between latitudes 18° 56' 16" and 19° 36' 58" N and longitudes 78° 56' 8" and 79° 56' 53" E. The **Geographical Area of the Division** is 3293.30 Km², which constitutes 20.41 % of the total area of the District. The terrain is undulating with a fringe of low hills in different directions. The general elevation of **hill ranges** varies from 125m to 570m above MSL. Deccangutta is the highest with an elevation of 633m above MSL.

• **Land use pattern** of the Division is given in **Table 2.1.**

• The **temperature** varies from 9°C to 47°C. The **average annual rainfall** of the division is 1051mm received mainly from south-west monsoons.

• The Black cotton and Red **soils** are found predominantly in the division and the sandy loams are found mostly in the middle and eastern portion of the division. The Saline and Alkaline soils are also found but to a lesser extent.

• The prominent geological formations in the division are Archaen Granites and Gneisses, the Deccan trap and the Gondwana sand stones. The lower Gondwana bear

some coal seams, which are being mined by Singareni Collieries Company Limited in the Bellampally-Mancherial belt. The Division has rich reserves of coal, lime stone and clays.

• The total **population** of the Division is 0.38million (2001 Census). The **per capita forest area** is 0.40 ha. The population density is 115 persons per Km².

Table 2.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3293.3	
Forest including Scrub	1392.19	42.27
Agriculture	1563.56	47.48
Land with Scrub	141.66	4.30
Fallow Lands	7.24	0.22
Grasslands	0.1	0.00
Settlements	11.68	0.36
Vegetation outside Forest	95.62	2.90
Water body	81.25	2.47

Recorded Forest Area: The **total notified forest area** of the Division is 1540.56 Km², which is 46.77 % of the **total geographical area**. Reserved, Protected and Unclassed Forests constitute 1337.74 Km² (86.8 %), 163.58 Km² (10.64%) and 39.24 Km² (2.5 %) of the total forest area respectively.

• As per Champion and Seth's classification, the Forests of Division fall under **Tropical dry deciduous forests**, but for the convenience of forest management into Teak forest and Mixed Forest.

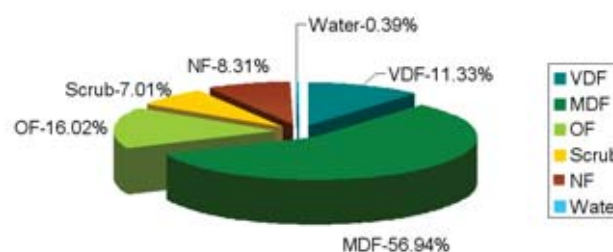
Protected Area: There is no Protected Area in the Division.

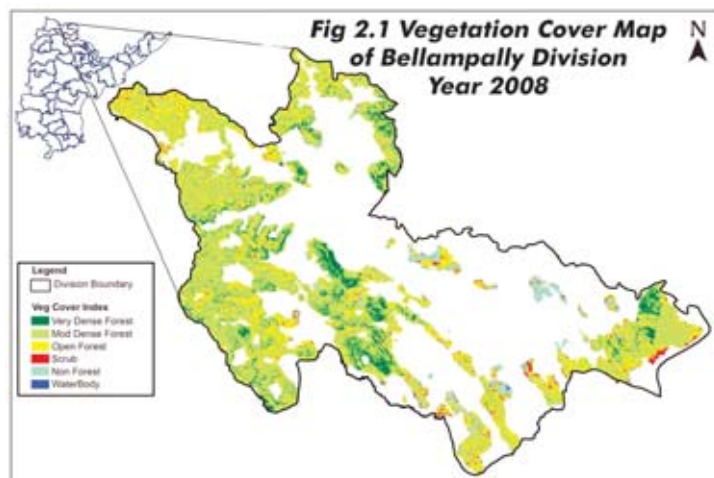
Community Forest Management: There are 228 **Vana Samrakshana Samities (VSSs)** in the Division. An area of 206.92Km² forests which is 13.43% of the notified forests is under the management of the VSSs.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 1285.11 Km², which is 39.02 % of the total Geographical area. In terms of the forest canopy density classes, the Division has 172.82 Km² of Very Dense Forests, 868.23 Km² of Moderately Dense Forests, and 244.06 Km² of Open Forests. The area of the Scrub is 106.84 Km², Non-Forest 126.96 Km² and Water Bodies 5.88 Km². The distribution of the forest cover of the division is shown in **Figure 2.1.**

• The **distribution of Forest Cover** in the CFM areas is as follows- 2.19 Km² Very Dense Forests & 96.53 Km² in Moderately Dense Forests, 68.46 Km² in Open Forests. The area of the Scrub is 12.07 Km², 18.52 Km² in Non-Forest and 0.39 Km² in Water bodies.

• **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Oct 2007 - Dec 2007), shows a





net loss of 23.69 Ha forest cover during the period of one year.

- The **change matrix**, given in **Table 2.2** reveals that there has been a decrease of 0.236 Km² of open forest in to Non Forest.
- The **simplified forest cover change matrix** is given in **Table 2.3.** and **2.4.**
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is encroachment.
- There are **60 Beats** in the Division. Negative change in Forest Cover is seen in only 2 Beats, and no change in 58 Beats.

• Beat wise forest cover in 2008, in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 2.5.**

Table 2.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	172.82	0.00	0.00	0.00	0.00	0.00	172.82
Moderately Dense Forest	0.00	868.23	0.00	0.00	0.00	0.00	868.23
Open Forest	0.00	0.00	244.06	0.00	0.24	0.00	244.30
Scrub	0.00	0.00	0.00	106.84	0.00	0.00	106.84
Non-Forest	0.00	0.00	0.00	0.00	126.72	0.00	126.72
Water	0.00	0.00	0.00	0.00	0.00	5.88	5.88
Total of 2008	172.82	868.23	244.06	106.84	126.96	5.88	1524.79
Net Change	0.00	0.00	-0.24	0.00	0.24	0.00	

Table 2.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1285.11	0.24	0	1285.35
Degraded Forest		233.56	0	233.56
Water	0	0	5.88	5.88
Total of 2008	1285.11	233.8	5.88	1524.79
Net Change	-0.24	0.24	0	

Table 2.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1391.95	0.24	0.00	1392.19
Barren		126.72	0.00	126.72
Water	0	0.00	5.88	5.88
Total of 2008	1391.95	126.96	5.88	1524.79
Net Change	-0.24	0.24	0.00	

Table 2.5: Beat wise Forest Cover (Area in Ha)

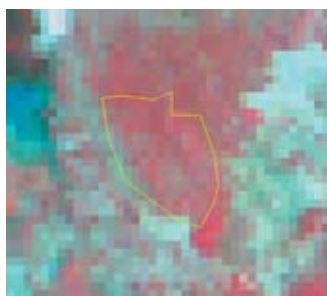
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ASIFABAD Range							
Asifabad	7309.58	496.02	1180.34	194.08	1870.44	0.00	85.17
Balhanpur	2076.37	175.66	940.64	159.94	1276.24	0.00	160.67
Bambara	6848.42	637.58	1628.73	451.01	2717.32	0.00	164.58
Chichpally	4272.15	66.13	1979.66	889.71	2935.5	0.00	136.43
Chintaguda	2994.04	355.55	1963.85	161.4	2480.8	0.00	161.54
Chirrakunta	4409.08	423.29	979.93	156.79	1560.01	0.00	30.91
Dantanpally	7583.18	618.98	3513.16	682.69	4814.83	0.00	274.74
Dhanora	4905.34	130.74	2558.9	466.88	3156.52	0.00	316.24
Goyegoan	4452.57	160.72	1402.87	160.38	1723.97	0.00	134.59
Indapur	4587.62	63.85	1550.61	515.29	2129.75	0.00	329.25
Indhani	5924.23	126.96	1217.32	426.71	1770.99	0.00	157.35
Kanergoan	8010.86	544.01	746.03	122.18	1412.22	0.00	93.56
Karangjiwada	7023.62	52.18	2860.93	2567.55	5480.66	0.00	508.75
Keremeri	5377.59	114.91	2041.35	491.96	2648.22	0.00	526.39
Kodanmovad[n]	2649.55	273.01	1326.83	173.74	1773.58	0.00	60.01
Kodanmovad[s]	2056.69	112.37	1310.35	130.28	1553	0.00	22.85
Nawdhari	3480.76	149.95	1182.88	528.21	1861.04	0.00	73.09
Sangvi	5719.72	63.16	2378.22	1036.03	3477.41	0.00	261.51
Wankidi	5749.31	428.17	1538.3	426.59	2393.06	0.00	116.03
Waudham	5530.49	335.56	1365.02	164.6	1865.18	0.00	280.93
Welgi	5841.23	728.99	1754.7	226.4	2710.09	0.00	262.97
Total	106802	6057.8	35421	10132.4	51610.8	0.00	4157.6
BELLAMPALLY Range							
Adilpet	3560.52	0	754.24	630.73	1384.97	-15.43	229.8
Bellampally	7802.49	2.36	656.11	590.58	1249.05	0.00	562.91
Dharmaraopet	4045.79	900.68	902.88	184.12	1987.68	0.00	64.88
Madaram	2780.58	431.86	1066.47	297.74	1796.07	0.00	108.18
Murliguda	2981.3	574.92	1700.87	289.43	2565.22	0.00	139.9
Narwaipet	4351.12	4.14	789.83	565	1358.97	0.00	184.6
Rallapet	7198.75	1.81	475.87	398.24	875.92	0.00	157.95
Tandur	11717.28	34.66	513.95	323.6	872.21	0.00	116.01
Venkatapur	2771.43	765.29	1049.33	150.05	1964.67	0.00	36.77
Total	47209.3	2715.7	7909.6	3429.49	14054.8	-15.43	1601
KUSHNEPALLY Range							
Girelly	5485.71	0	14.56	123.53	138.09	0.00	130.69
Gopalpet	4462.05	1007.98	2778.34	214.06	4000.38	0.00	60.67
Hathni	14815.12	0	12.46	41.19	53.65	0.00	238.75
Kushnepally	8238.43	0.79	678.2	592.79	1271.78	0.00	163.89
Lingala	4803.53	104.8	904.36	387.32	1396.48	0.00	166.87
Nagaram	5901.3	251.78	1558.3	357.6	2167.68	0.00	143.75
Nennel	6547.37	0.56	815.28	473.4	1289.24	0.00	83.71
Rampur	3529.5	0.95	1402.88	277.56	1681.39	0.00	128.01
Rangapet	6647.96	60.08	993.47	634.98	1688.53	-8.26	391.02
Rebbena[kpl]	10046.35	6.98	880.56	707.06	1594.6	0.00	402.41



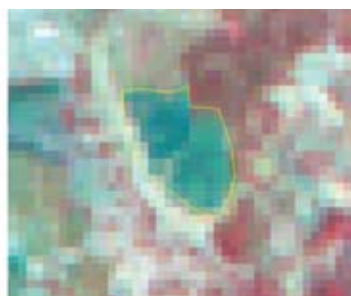
Vemanpally	8592.1	495.37	3424.82	966.98	4887.17	0.00	519.24
Total	79069.4	1929.3	13463	4776.47	20169	-8.26	2429
REBBANA Range (Kushnepally)							
Abbapur	1844.23	196.27	822.9	264.29	1283.46	0.00	193.19
Ameenguda	2998.51	491.38	729.26	177.61	1398.25	0.00	53.2
Dharmaram	15462.48	0	127.4	902.55	1029.95	0.00	462.93
Edulawada	10635.7	980.83	684.07	106.67	1771.57	0.00	51.04
Rebbena	7445.07	20.27	585.15	257.94	863.36	0.00	295.72
Takkallapally	6864.66	122.02	644.38	271.93	1038.33	0.00	96.63
Total	45250.7	1810.8	3593.2	1980.99	7384.92	0.00	1152.7
TIRYANI Range							
Bhimrelly	3126.4	305.55	1944.13	549.69	2799.37	0.00	84.47
Chintalamadira	3495.28	188.65	1504.89	255.01	1948.55	0.00	8.28
Devaiguda	3741.91	571.25	1755.13	241.85	2568.23	0.00	56.34
Ginnedhari	4188.92	225.45	1623.67	437.67	2286.79	0.00	46.72
Gopera	3673.72	300.54	2707.03	213.01	3220.58	0.00	258.88
Goyena	6356.66	520.4	4790.86	404.56	5715.82	0.00	443.42
Gudipet	4390.77	123.33	1223.06	756.04	2102.43	0.00	142.07
Gundal[east]	2891.2	507.76	1703.18	163.96	2374.9	0.00	13.56
Gundal[west]	2881.78	378.26	2133.45	133.97	2645.68	0.00	23.56
Irkepally	4752.63	174.33	1820.68	467.61	2462.62	0.00	93.76
Kannepally	5444.18	530.76	2216.24	304.87	3051.87	0.00	61.95
Mangi	3748.23	373.7	2459.24	88.68	2921.62	0.00	46.7
Meddi	2306.93	568.4	554.77	93.7	1216.87	0.00	63.64
Total	50998.61	4768.38	26436.3	4110.62	35315.33	0.00	1343.35
Grand Total	329330.34	17281.95	86822.89	24429.99	128534.83	-23.69	10683.63

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.58449
Latitude	19.09762
Area_Ha	8.26
Class	Open to NF
Comp_No	372
Beat	Rangapet
Range	Kushnepally
Division	Bellampally

3. Jannaram Division

Adilabad Circle

Introduction: Jannaram Forest Division lies in the Adilabad District, between latitudes 18° 55' 21" and 19° 21' 5" N and longitudes 78° 45' 10" and 79° 14' 5" E. The Geographical Area of the Division is 925.27Km², which is 5.7 % of the total area of the District. The Northwest corner of this Division is the Birsaipet plateau is 396m above mean seal level. This plateau is all undulatory and drains from either side, into Peddavagu, which runs across the plateau from North-East to South-West. Land use pattern of the Division is given in **Table 3.1.**

The **temperature** varies from 15°C to 45°C. **Average annual Rainfall** of the division is 750mm received mainly from south-west monsoons.

In Kawal Wildlife Sanctuary about 30 seasonal streams are identified. The area serves as a catchment for many streams, which drain into Kaddam reservoir and Godavari River. There are a large number of small, medium and big tanks scattered through out the division inside and out side the Reserve Forest.

Red soils are extensive, followed by Black soils. Alluvial and laterite soils are found occasionally to a small extent.

The total **population** of the Division is 0.09million (2001 Census). The Per capita forest area is 0.64ha. The population density is 104 persons per Km².

Recorded Forest Area: The **total notified forest** area of the Division is 617.94 Km², which is 66.78 % of the total geographical area. Reserved and Protected Forests Constitute 80.82 Km² (13.2 %) and 537.12 Km² (86.8 %) of the total forest area respectively. (Source: Facts & Figures from APFD website).

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous & Bamboo Mixed Forests (Dry Teak bearing Forests, Dry Mixed Forests).

Protected Area: The Division is one of the two constituent Divisions of Kawal Wildlife Sanctuary. The total notified forest area of the Division is included in Kawal WLS.

Community Forest Management: There are 75 **Vana Samrakshana Samities** (VSSs) in the Division. An area of 122.02 Km² forests, which is 19.74 % of of the notified forests, is under the management of the VSSs.

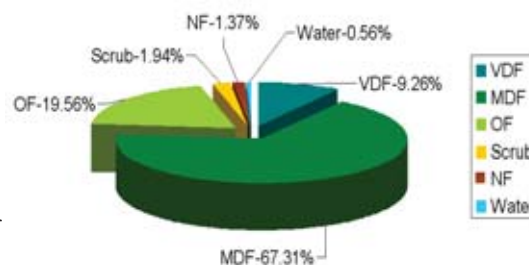
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 618.75 Km², which is 66.87 % of the total Geographical area. In terms of the forest canopy density classes, the Division has 59.60 Km² of Very Dense Forests, 433.26 Km² of Moderately Dense Forests, and 125.89 Km² of Open Forests. The area of the Scrub is 12.54 Km², Non-Forest 8.81 Km² and Water Bodies 3.63 Km². The distribution of the forest cover of the division is shown in **Figure 3.1.**

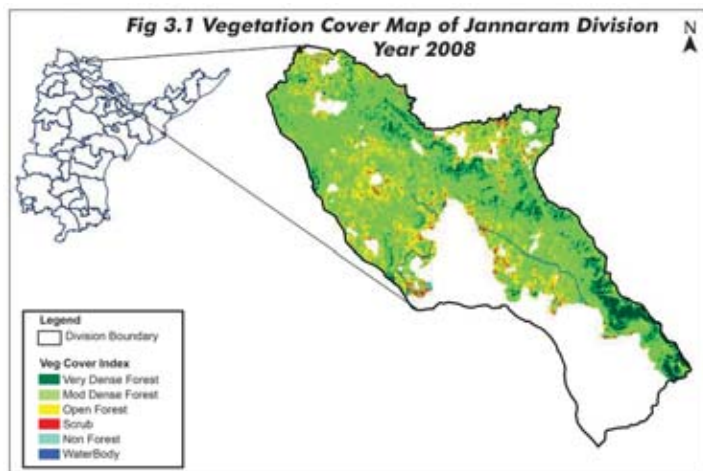
• The **distribution of Forest Cover** in the CFM areas is as follows- 1.65 Km² in Very Dense Forests, 56.19 Km² in Moderately Dense Forests, 55.17 Km² in Open Forests. The area of the Scrub is 3.90 Km², 2.50 Km² is Non-Forest, and 1.26 Km² is Water bodies.

• **Comparison** of the current forest cover (Satellite data of 30th Dec 2008) with that of previous assessment (Satellite

Table 3.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	925.27	
Forest including Scrub	631.29	68.23
Agriculture	236.33	25.54
Land with Scrub	9.53	1.03
Fallow Lands	3.91	0.42
Grasslands	0	0.00
Settlements	13.03	1.41
Vegetation outside Forest	13.9	1.50
Water body	17.28	1.87





Imagery of 25th Oct 2007), shows a net loss of 4.13 Ha during the period of one year.

- The **change matrix**, given in **Table 3.2** reveals that there has been a decrease of 0.0413 Km² of Moderately Dense forest in to Scrub.
- The **simplified forest cover change matrix** is given in **Table 3.3** and **Table 3.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is due to encroachment.

- There are **34 Beats** in the Division. Negative change in Forest Cover is seen in only 1 Beat, and no change in 33 Beats.
- Beat wise forest cover in 2008, in different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment is given in **Table 3.5**.

Table 3.2: Forest Cover change matrix (Area in Km²)

2007 (Data of 25th Oct 2007)	2008 (Data of 30th Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	59.60	0.00	0.00	0.00	0.00	0.00	59.60
Moderately Dense Forest	0.00	433.26	0.00	0.04	0.00	0.00	433.30
Open Forest	0.00	0.00	125.89	0.00	0.00	0.00	125.89
Scrub	0.00	0.00	0.00	12.50	0.00	0.00	12.50
Non-Forest	0.00	0.00	0.00	0.00	8.81	0.00	8.81
Water	0.00	0.00	0.00	0.00	0.00	3.63	3.63
Total of 2008	59.60	433.26	125.89	12.54	8.81	3.63	643.73
Net Change	0.00	-0.04	0.00	0.04	0.00	0.00	0.00

Table 3.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of 25th Oct 2007)	2008 (Data of 30th Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	618.75	0.04	0.00	618.79
Degraded Forest	0.00	21.31	0.00	21.31
Water	0.00	0.00	3.63	3.63
Total of 2008	618.75	21.35	3.63	643.73
Net Change	-0.04	0.04	0.00	

Table 3.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of 25th Oct 2007)	2008 (Data of 30th Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	631.29	0.00	0.00	631.29
Barren	0.00	8.81	0.00	8.81
Water	0.00	0.00	3.63	3.63
Total of 2008	631.29	8.81	3.63	643.73
Net Change	0.00	0.00	0.00	

Table 3.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BIRSAIPET Range							
Birsaipet-e	1899.62	53.23	1526.74	113.07	1697.04	0.00	4.00
Birsaipet-w	3084.16	45.49	2208.79	355.46	2632	0.00	22.26
Dantanpalli-e	3331.89	167.5	2048.72	564.5	2832.93	0.00	52.21
Dantanpalli-w	2402.02	89.8	1328.56	743	2235.22	-4.13	73.86
Gandigopalpur	5737.16	617.45	3927	828.59	5432.25	0.00	59.21
Maisampet	3829.67	120.61	2407.43	1116.37	3690.5	0.00	46.09
Rampur	2298.77	13.1	1905.33	336.74	2266.49	0.00	11.32
Total	22583.29	1107.18	15352.6	4057.73	20786.43	-4.13	268.95
INDANPALLI Range							
Dosthnagar	1578.12	0	984.1	464.55	1473.95	0.00	25.3
Indanpalli	1767.42	50.59	864.83	730.61	1711.35	0.00	65.32
Islampur	3425.54	246.67	2450.41	504.84	3249.42	0.00	47.5
Kalamadugu	3633.14	24.5	395.77	354.26	904.84	0.00	130.31
Kalleda	2678.99	129.92	1607.75	622.65	2405.84	0.00	45.52
Kawal	5573.94	368.63	2472.44	662.04	3571.52	0.00	68.41
Kothapalli	2584.05	196.68	972.03	727.71	1971.53	0.00	75.11
Narlapur	2015.74	1.73	1390.7	568.28	1994.59	0.00	33.88
Total	23256.94	1018.72	11138	4634.94	17283.04	0.00	491.35
JANNARAM Range							
Alinagar	2665.11	171.15	2116.35	229.88	2522.14	0.00	4.76
Chintaguda	2010.95	37.62	756.88	358.23	1172.56	0.00	19.83
Dongapalli	3469.18	604.42	2526.96	217.17	3381.04	0.00	32.49
Jamuldhara	2781.33	153.42	1560.85	504.14	2296.42	0.00	78.01
Jannaram	3747.2	0	588.64	500.83	1167.68	0.00	78.21
Kistapur	4030.65	89.79	1247.23	421.16	1804.04	0.00	45.86
Mamidipalli	1970.5	85.3	917.54	508.58	1576.82	0.00	65.4
Paidipalli	1225.85	24.96	728.84	252.87	1036.79	0.00	30.12
Total	21900.77	1166.66	10443.3	2992.86	14957.49	0.00	354.68
TADLAPET Range							
Chintapalli	2577.84	522.62	400.86	57.59	983.77	0.00	2.7
Dammannapet	2325.35	369.21	289.7	24.94	683.85	0.00	0
Lingapur	1483.43	400.17	335.76	55.59	823.12	0.00	31.6
Makulpet	2139.21	367.33	314.97	16.58	698.88	0.00	0
Mallial	2458.1	86.35	1949.35	340.53	2402.42	0.00	26.19
Mohammadabad	3031.68	5.14	622.29	284.1	958.82	0.00	47.29
Patha mamidipalli	2415.62	167.44	360.69	26.34	567.28	0.00	12.81
Ralli	1317.27	111.55	196.82	11.38	322.2	0.00	2.45
Singaraipet	1051.32	195.82	792.36	46.79	1040.91	0.00	5.94
Tadlapet	2135.17	350.11	679.43	28.44	1059.78	0.00	1.8
Tanimadugu	3851.03	91.23	454.18	10.97	561.08	0.00	4.7
Total	24786.02	2666.97	6396.41	903.25	10102.11	0.00	135.48
Grand Total	92527.02	5959.53	43330.3	12588.78	63129.07	-4.13	1250.46

*Net Change in Forest Cover Only i.e., VDF, MDF and OF to Scrub and Non-Forest between 2007 and 2008



4. Kagaz Nagar Division

Introduction: Kagaz nagar Forest Division lies in the North Eastern side Adilabad District, between latitudes 19° 11' 51" and 19° 36' 20"N and longitudes 79° 22' 28" and 79° 58' 21" E. The Geographical Area of the Division is 1645.83 Km², which constitutes 10.20% of the total area of the District. The important rivers and streams of the division are Wardha, Pranahitha and Peddavagu which finally joins Godavari.

Land use pattern of the Division is given in **Table 4.1**

Table 4.1: Land use Pattern		
Land use	Area in Sqkm	Percentage
Total geographical area	1645.83	
Forest including Scrub	777.61	47.25
Agriculture	706.05	42.90
Land with Scrub	73.15	4.44
Fallow Lands	11.61	0.71
Grasslands	0.00	0.00
Settlements	8.51	0.52
Vegetation outside Forest	34.68	2.10
Water body	34.22	2.08

The climate of the Division is generally dry and hot. The temperature varies from 6°C to 48°C. The normal Annual rainfall of the division is 904mm, received mainly from south-west monsoons.

The rock formations in the division are Achaean Granites and Genesis, the Deccan trap and the Gondwana sand stones, soils formed from these rocks supports good Teak forests. Soil types are Black cotton soils, Cahlka and Red loams, Sandy loams, Saline and Alkaline soils.

The total **population** of the Division is 0.22million (2001 Census). The Per capita forest area is 0.38 ha. The population density is 134 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 858.81 Km², which is 52.18 % of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 650.62 Km² (75.74 %), 206.58 Km² (24 %) and 1.61 Km² (0.18 %) of the total forest area respectively.

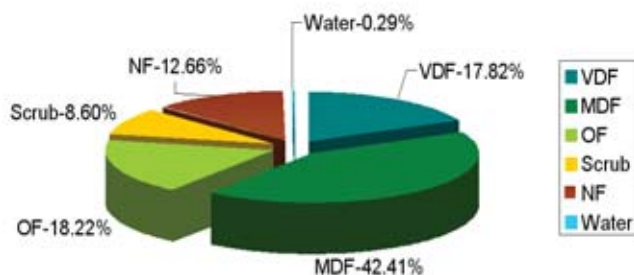
As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous & Bamboo Mixed Forests.

Protected Area: There is no Protected Area in the Division.

Community Forest Management: There are 113 **Vana Samrakshana Samities** (VSSs) in the Division. An area of 148.42 Km² forests which is 17.27% of the notified forests, is under the management of the VSSs.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 701.6 Km², which is 42.63 % of the total Geographical area. In terms of the forest canopy density classes, the Division has 159.17 Km² of Very Dense Forests, 378.69 Km² of Moderately Dense Forests and 163.74 Km² of Open Forests. The area of the Scrub is 74.96 Km², Non-Forests 114.14 Km² and Water Bodies 2.59 Km². The distribution of the forest cover of the division is shown in **Figure 4.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows- 3.89 Km² in Very Dense Forest, 61.87 Km² in Moderately Dense Forest and 51.16 Km² in Open Forest. The area of the Scrub is 15.10 Km², 14.24 Km² is Non-Forest and 0.33 Km² is Water bodies.



- Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Oct 2007 - Dec 2007), shows a net loss of 77.27 Ha forest cover during the period of one year.

- The **change matrix**, given in **Table 4.2**, reveals that there has been a decrease of 0.17 Km² in moderately dense forest.

- The **simplified forest cover change matrix** is given in **Table 4.3.** and **Table 4.4.**
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is due to encroachments and failure of plantations.
- There are **39 Beats** in the Division. Negative change in Forest Cover is seen in 3 Beats, positive change in 4 Beats and no change in 32 Beats.
- Beat wise forest cover in 2008 in different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment is given in **Table 4.5.**

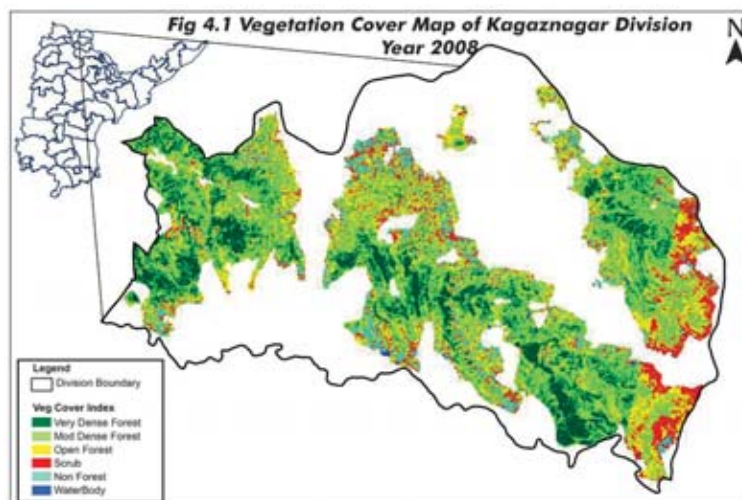


Table 4.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	159.17	0.00	0.00	0.00	0.00	0.00	159.17
Moderately Dense Forest	0.00	378.69	0.00	0.17	0.00	0.00	378.86
Open Forest	0.00	0.00	162.35	0.12	0.33	0.00	162.80
Scrub	0.00	0.00	0.35	74.67	1.76	0.00	76.78
Non-Forest	0.00	0.00	1.04	0.00	112.05	0.00	113.09
Water	0.00	0.00	0.00	0.00	0.00	2.59	2.59
Total of 2008	159.17	378.69	163.74	74.96	114.14	2.59	893.29
Net Change	0.00	-0.17	0.95	-1.82	1.05	0.00	0.00

Table 4.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	700.83	0.00	0.00	700.83
Degraded Forest	0.77	189.1	0.00	189.87
Water	0.00	0.00	2.59	2.59
Total of 2008	701.6	189.1	2.59	893.29
Net Change	0.77	-0.77	0.00	

Table 4.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	776.56	1.05	0	777.61
Barren		113.09	0	113.09
Water	0	0	2.59	2.59
Total of 2008	776.56	114.14	2.59	893.29
Net Change	-1.05	1.05	0	

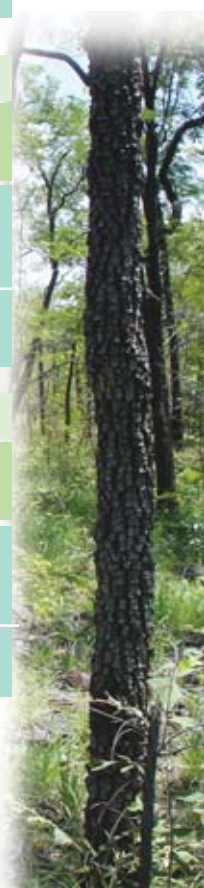


Table 4.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BIJJUR Range							
Bijjur	4540.11	500.21	1443.17	293.53	2236.91	0.00	103.09
Ellur	4455.87	1295.97	918.24	148.98	2363.19	0.00	13.84
Gundepally	3642.46	902.8	1432.57	604.44	2939.81	0.00	171.51
Indergaon	2239.67	40.27	638.18	452.48	1130.93	0.00	205.38
Kondapally	3740.91	383.2	1036.9	458.08	1878.18	0.00	163.85
Kuntalamanepally	4062.79	353.25	956.04	89.46	1398.75	-10.85	75.76
Lodpally	2054.69	523.26	985.54	219.82	1728.62	0.00	47.05
Mogelly	2737.6	0	623.12	545.83	1168.95	0.00	526.81
Murliguda	4872.29	0	568.49	1250.41	1818.9	0.00	1010.49
Papanpet	2524.11	300.14	1052.85	385.33	1738.32	0.00	257.25
Sulgupally	4172.77	282.41	1183.69	109.76	1575.86	-5.34	77.27
Total	39043.27	4581.51	10838.79	4558.12	19978.42	-16.19	2652.3
KAGAZNAGAR Range							
Ankoda	4312.92	763.51	756.75	160.19	1680.45	0.00	30.69
Bombaiguda	2249.84	20.13	430.36	287.98	738.47	0.00	189.95
Chedwai	5542.36	706.4	1208.64	622.36	2537.4	0.97	257.23
Kadamba	3354.45	1104.87	1464.89	402.75	2972.51	0.00	70.63
Korsini	4858.11	929.39	1302.21	311.46	2543.06	0.00	134.36
Kothapet	7685.26	1226.97	1453.1	497.04	3177.11	0.00	194.99
Raspalli	5641.26	102.51	403.58	439.5	945.59	27.16	181.4
Vempalli	11139.99	1145.26	1285.83	555.29	2986.38	0.00	136.47
Total	44784.19	5999.04	8305.36	3276.57	17580.97	28.13	1195.72
KARJELLI Range							
Ankoda	6864.19	61.77	318.39	437.08	817.24	0.00	98.93
Dimda	1992.95	78.94	661.41	217.31	957.66	-6.51	363.23
Gudem	4364.17	176.43	1032.89	966.19	2175.51	0.00	840.02
Gudlabori	6862.49	0.5	109.4	366.9	476.8	0.00	113.72
Karjelly	3634.47	514.13	1054.77	139.14	1708.04	0.00	72.36
Katepally	3384	236.95	1043.12	327.16	1607.23	0.00	71.18
Keethani	1603.18	482.52	1013.76	24.93	1521.21	0.00	9.14
Korsana	2183.42	439.51	1165.66	147.15	1752.32	0.00	23.79
Kukuda	2665.31	131	1048.17	379.4	1558.57	0.00	114.53
Total	33554.18	2121.75	7447.57	3005.26	12574.58	-6.51	1706.9
SIRPUR Range							
Bhupalpatnam	2199.45	167.37	735.83	393.24	1296.44	50.14	159.92
Cheelapally	4664.95	660.92	2793.48	702.23	4156.63	0.00	128.65
Chintakunta	3324.91	167.65	960.7	463.47	1591.82	0.00	118.99
Dabba	2821.91	33.63	368.19	285.68	687.5	0.00	218.92
Kanki	4067.15	8.32	434.23	454.82	897.37	0.00	307.59
Loanvelly	5554.13	25.21	423.12	405.75	854.08	0.00	269.23
Makodi	4748.67	677.12	1570.78	624.03	2871.93	0.00	194.92
Malini	3345.34	943.41	1727.8	276.99	2948.2	0.00	49.28
Muthampet	9738.65	70.8	857.73	889.51	1818.04	21.7	341.07
Rebbena	2341.56	449.73	799.84	238.84	1488.41	0.00	110.24
Sirpur	4395.08	10.02	622.91	705.06	1337.99	0.00	225.14
Total	47201.8	3214.18	11294.61	5439.62	19948.41	71.84	2123.95
Grand Total	164583.44	15916.48	37886.33	16279.57	70082.38	77.27	7678.87

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

5. Mancherial Division

Adilabad Circle

Introduction: Mancherial Forest Division lies in the South-East Part of Adilabad District, between latitudes 18° 40' 10" and 19° 8' 42" N and longitudes 79° 10' 15" and 79° 57' 53" E. The Geographical Area of the Division is 2328.56 Km², which constitutes 14.4% of the total area of the District. The elevation of hill ranges varies from 135m – 540m from MSL. The highest point in the Division is 556m from MSL. Godavari and Pranahitha are the major rivers of the division. Pranahitha forms eastern boundary and Godavari forms southern boundary of the division. Land use pattern of the Division is given in **Table 5.1**.

The **temperature** varies from 9°C to 48°C. The **average annual rainfall** of the division is 1100mm received mainly from south-west monsoon.

The **soils** if Mancherial Division ranges from Black cotton, Chalka sandy loam, Red loams to Saline and Alkaline soils. The Black cotton, Chalka and Red loamy soils are found throughout the division and the sandy loams are found mostly in the middle portion of the division. Coal is found in the Barakar sand stone of Gondwanas and the Limestone deposits are found in Rally block well situated for cement manufacture.

The total population of the Division is 0.5million (2001 Census). The Per capita forest area is 0.23 ha. The population density is 220 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1205.83 Km², which is 51.85 % of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 1180.64 Km² (97.92 %), 24.09 Km² (0.0199 %) and 1.10 Km² (0.09 %) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous & Bamboo Mixed Forests (Dry Teak bearing Forests, Dry Mixed Forests).

Protected Area: The Division consists of Pranahitha Wild Life Sanctuary, with an area of 68.37 Km² which constitutes 2.9% of total geographic area of the Division. The Division also part of Shivaram Wild Life Sanctuary includes two beats of 14.23 km² area.

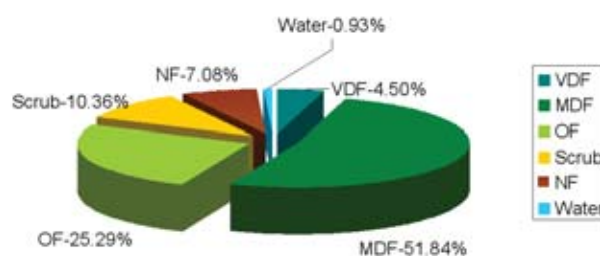
Community Forest Management: There are 113 Vana Samrakshana Samities (VSSs) in the Division. An area of 137.67 Km² forests which is 11.41 % of the notified forests, is under the management of the VSSs.

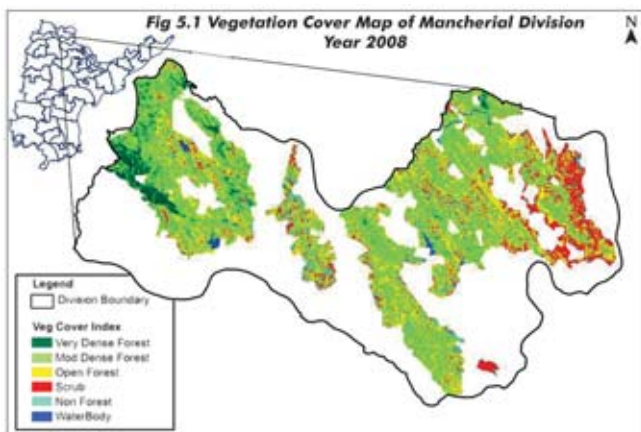
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 909.71 Km², which is 39.07 % of the total Geographical area. In terms of the forest canopy density classes, the Division has 50.23 Km² of Very Dense Forests, 578.11 Km² of Moderately Dense Forests, and 281.37 Km² of Open Forests. The area of the Scrub is 115.2 Km², Non-Forest 80.05 Km² and Water Bodies 10.41 Km². The distribution of the forest cover of the division is shown in **Figure 5.1**.

- The **distribution of Forest Cover** in the CFM areas is - 0.53 Km² in Very Dense Forests, 45.51 Km² in Moderately Dense Forests, 52.56 Km² in Open Forests. The area of the Scrub is 20.21 Km², 11.56 Km² is Non-Forest & 0.48 Km² is Water bodies.

Table 5.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2328.56	
Forest including Scrub	1026.02	44.06
Agriculture	983.23	42.22
Land with Scrub	115.78	4.97
Fallow Lands	63.42	2.72
Grasslands	0	0.00
Settlements	13.76	0.59
Vegetation outside Forest	65.25	2.81
Water body	61.1	2.63





• **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imageries of Oct 2007 - Dec 2007), shows a net loss of 75.2 Ha forest cover during the period of one year.

• The **change matrix**, given in **Table 5.2** reveals that there has been a decrease of 0.75 Km² open forest and 0.36 Km² in Scrub

• The simplified forest cover change matrix is given in **Table 5.3** and **5.4**

• The main reason for decrease in forest cover is due to encroachments failure of plantations and clearance

for raising of plantations. • There are **50 Beats** in the Division. Negative change in Forest Cover is seen in 10 Beats, positive change in 4 Beats and no change in 36 Beats. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 5.5**.

Table 5.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	50.23	0	0	0	0	0	50.23
Moderately Dense Forest	0	578.11	0	0	0	0	578.11
Open Forest	0	0	277.83	1.69	2.6	0	282.12
Scrub	0	0	1.47	113.5	0.58	0	115.56
Non-Forest	0	0	2.07	0	76.87	0	78.94
Water	0	0	0	0	0	10.41	10.41
Total of 2008	50.23	578.11	281.37	115.2	80.05	10.41	1115.37
Net Change	0	0	-0.75	-0.36	1.11	0	0

Table 5.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	909.71	0.75	0	910.46
Degraded Forest		194.5	0	194.5
Water	0	0	10.41	10.41
Total of 2008	909.71	195.25	10.41	1115.37
Net Change	-0.75	0.75	0	

Table 5.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007- Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1024.91	1.11	0.00	1026.02
Barren	0.00	78.94	0.00	78.94
Water	0.00	0.00	10.41	10.41
Total of 2008	1024.91	80.05	10.41	1115.37
Net Change	-1.11	1.11	0.00	

Table 5.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHENNUR Range							
Annaram	3553.96	0.00	316.82	722.19	1039.01	0.00	744.31
Chennur	6591.35	0.00	1410.39	910.35	2320.74	-10.17	431.62
Kistampet	13738.4	31.41	2021.29	1039.79	3092.49	19.18	291.67
Kotapalli	3966.49	4.49	1193.31	1291.58	2489.38	13.18	333.22
Lingannapet	2746.83	0.00	602.75	544.67	1147.42	-11.03	532.63
Nagampet	3088.39	0.00	844.37	607.31	1451.68	-9.27	475.44
Pangidisomaram	2570.43	0.00	1078.67	708.43	1787.1	0.00	196.16
Parpalli	5565.01	0.00	226.17	593.64	819.81	0.00	877.11
Sirsa	3828.26	0.00	291.55	306.8	598.35	0.00	750.96
Venkatapur	3055.98	30.42	1817.9	517.45	2365.77	0.00	150.86
Total	48705	66.32	9803.2	7242.2	17112	1.89	4784
LUXETTIPET Range							
Devapur	6079.42	342.28	2827.38	923.65	4093.31	0.00	197.86
Gadhpur	3021.65	89.48	1246.19	504.1	1839.77	0.00	138.5
Hanmanthpally	9453.93	1065.4	1957.81	120.19	3143.42	0.00	8.86
Korichelma	4619.52	1102.3	939.06	89.07	2130.4	0.00	8.86
Medaram	3815.16	247.31	1033.17	320.97	1601.45	0.00	99.33
Mulkalla	4264.96	2.07	1107.8	421.82	1531.69	0.00	42.84
Muthampalli	6479.01	191.08	1642.63	652.64	2486.35	0.00	105.69
Old mancherial	5148.99	33.12	913.94	529.05	1476.11	0.00	101.37
Peddampet	8203.87	811.68	895.29	217.86	1924.83	0.00	85.04
Ralli	3798.18	20.05	1997.91	733.32	2751.28	0.00	79.23
Sonapur	4423.58	404.97	2832.45	419.43	3656.85	0.00	88.96
Tikannapalli	10242.9	115.77	2705.79	1142.87	3964.43	0.00	152.57
Venkatapur	3228.34	259.44	1191.04	256.65	1707.13	0.00	40.37
Total	72780	4685	21290	6331.6	32307	0.00	1149.5
MANCHERIAL Range							
Arapelli	3934.22	0.00	1035.72	652.15	1687.87	0.00	133.8
Asnad	5974.05	1.68	1908.03	588.98	2498.69	0.00	118.07
Audam	2749.28	20.57	839.61	293.38	1153.56	0.00	64.33
Bhimaram	4213.16	5.25	757.37	601.25	1363.87	0.00	193.23
Burugupalli	2892.28	20.8	1181.24	569.88	1771.92	0.00	115.97
Dampur	2747.11	0.00	1494.76	309.22	1803.98	0.00	23.44
Gudipally	4446.17	12.44	1074.12	452.5	1539.06	-12.09	109.65
Indaram	6901.96	0.00	441.3	801.49	1242.79	-13.24	402.99
Jaipur	2575.37	5.23	568.43	361.27	934.93	-47.46	103.47
Kundaram	5942.92	2.42	1298.98	518.08	1819.48	94.74	76.15
Mancherial	7511.1	0.00	658.57	624.83	1283.4	-55.07	262.79
Mandamarry	4770.13	7.54	203.13	343.74	554.41	0.00	241.58
Pegadapally	5770.16	1.07	896	537.73	1434.8	0.00	163

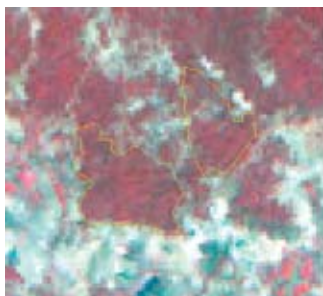


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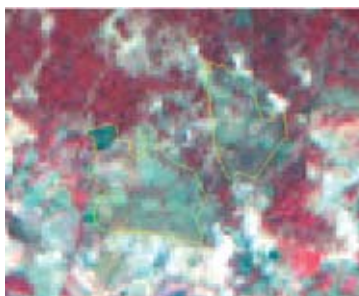
Pownur	4340.34	6.14	1215.42	381.28	1602.84	0.00	49.88
Sarangapalli	4147.76	0.00	579.96	845.45	1425.41	0.00	326.27
Somanpally	8623.03	0.00	383.28	477.44	860.72	0.00	464.8
Total	77539	83.14	14536	8358.7	22978	-33.1	2849.4
NEELWAI Range							
Bopparam	1960.03	0.00	915.51	370.29	1285.8	-22.83	245.69
Katepally	2883.28	166.63	1085.16	276.54	1528.33	0.00	70.87
Kharji	2030.25	2.58	1209.15	228.62	1440.35	0.00	28.34
Kothur	3014.09	8.07	1387.64	765.55	2161.26	-50.09	204.55
Mailaram	2458.34	3.83	1327.02	778.79	2109.64	0.00	164.47
Mallampet	2957.49	1.24	1653.35	518.66	2173.25	0.00	84.49
Nakkalpally	2259.59	0.00	1186.68	319.38	1506.06	0.00	47.32
Neelwai	2766.02	0.00	524.01	774.38	1298.39	0.00	236.03
Sawanpally	2347.86	6.20	1110.46	437.71	1554.37	0.00	119.35
Shankarapur	3548.91	0.00	1303.79	965.41	2269.2	36.51	257.14
Yenchapalli	7606.21	0.00	478.34	844.03	1322.37	-7.55	1315.12
Total	33832.00	188.6	12181	6279.4	18649	-44.00	2773.4
Grand Total	232856.00	5023.00	57811.00	28212.00	91046.00	-75.20	11556

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.64247
Latitude	18.95879
Area_Ha	31.02
Class	Open to NF
Comp_No	726
Beat	Kothur
Range	Neelwai
Division	Mancherial

Longitude	79.64793
Latitude	18.96213
Area_Ha	19.07
Class	Open to NF
Comp_No	726
Beat	Kothur
Range	Neelwai
Division	Mancherial

6. Nirmal Division

Adilabad Circle

Introduction: Nirmal Forest Division lies in the South-West Part of Adilabad District, between latitudes 18° 50' 39" and 19° 20' 31"N and longitudes 77° 45' 45" and 78° 56' 34" E. The Geographical Area of the Division is 3525.63 Km², which constitutes 21.8% of the total area of the District. Godavari is the major river forms southern boundary of the Division. Siddha and Kaddam rivers are tributaries of Godavari which flows through the Division.

Land use pattern of the Division is given in **Table 6.1**. The **temperature** varies from 16°C to 46°C. The normal Annual rainfall of the division is 800mm received mainly from south-west monsoons.

Black cotton soils, Cahlka and Red soils, Sandy loams, Saline and Alkaline soils are found in this Division. The division has reserves of iron ore, lime stone and clays.

The total **population** of the Division is 0.62million (2001 Census). The Per capita forest area is 0.18 ha. The population density is 176 persons per Km².

Table 6.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3525.63	
Forest including Scrub	927.25	26.30
Agriculture	1951.56	55.35
Land with Scrub	81.76	2.32
Fallow Lands	75.74	2.15
Grasslands	0.46	0.01
Settlements	32.49	0.92
Vegetation outside Forest	144.85	4.11
Water body	311.52	8.84

Recorded Forest Area: The total notified forest area of the Division is 1178.4 Km², which is 33.42 % of the total geographical area. Reserved, Protected and Unclassed Forests Constitute 354.57 Km² (30%), 743.17 Km² (63%) and 80.66 Km² (7%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous & Bamboo Mixed Forests (Dry Teak bearing Forests, Dry Mixed Forests).

Protected Area: The Division is one of the two constituent Divisions of Kawal Wildlife Sanctuary. The total notified forest area of the Division is included in Kawal WLS. 407.2 km² of geographical area is included in Kawal WLS.

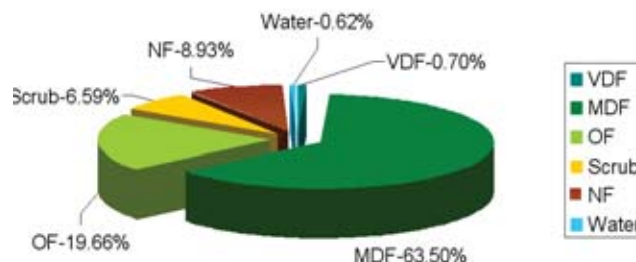
Community Forest Management: There are 205 **Vana Samrakshana Samities (VSSs)** in the Division. An area of 282.48 Km² forests, which is 23.97 % of the notified forests, is under the management of the VSSs.

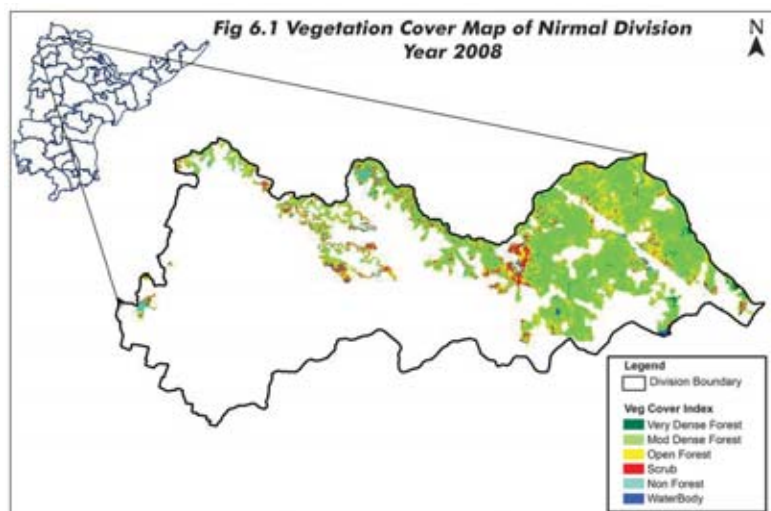
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 858.71 Km², which is 24.36 % of the total Geographical area. In terms of the forest canopy density classes, the Division has 7.18 Km² of Very Dense Forests, 650.8 Km² of Moderately Dense Forests, and 200.73 Km² of Open Forests. The area of the Scrub is 67.92 Km², Non-Forest 92.15 Km² and Water Bodies 6.37 Km². The distribution of the forest cover of the division is shown in **Figure 6.1**.

•The **distribution of Forest Cover** in the CFM areas is - 0.267 Km² in Very Dense Forests, 101.71 Km² in Moderately Dense Forests, 116.41 Km² in Open Forests. The area of the Scrub is 27.62 Km², 20.53 Km² is Non-Forest, and 0.63 Km² is Water bodies.

•**Comparison** of the current forest cover (Satellite data of 7th Nov 2008) with that of previous assessment (Satellite Imagery of 13th Nov 2007), shows a net loss of 103.7 Ha of forest cover during the period of one year.

•The **change matrix**, given in **Table 6.2**, reveals that there has been a decrease of 0.18 Km² of MDF and 0.85 Km² of open forest.





- The **simplified forest cover change matrix** is given in **Table 6.3** and **Table 6.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is due to encroachments.
- There are **56 Beats** in the Division. Negative change in Forest Cover is seen in 11 Beats and no change in 45 Beats.
- Beat wise forest cover in 2008 in different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment is given in **Table 6.5**.

Table 6.2: Forest Cover change matrix (Area in Km²)

2007 (Data of 13th Nov 2007)	2008 (Data of 7th Nov 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	7.18	0.00	0.00	0.00	0.00	0.00	7.18
Moderately Dense Forest	0.00	650.8	0.00	0.13	0.05	0.00	650.98
Open Forest	0.00	0.00	200.73	0.29	0.56	0.00	201.58
Scrub	0.00	0.00	0.00	67.50	0.00	0.00	67.51
Non-Forest	0.00	0.00	0.00	0.00	91.54	0.00	91.50
Water	0.00	0.00	0.00	0.00	0.00	6.37	6.37
Total of 2008	7.18	650.8	200.73	67.92	92.11	6.37	1025.16
Net Change	0.00	-0.18	-0.85	0.42	0.61	0.00	

Table 6.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of 13th Nov 2007)	2008 (Data of 7th Nov 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	858.71	1.03	0.00	859.74
Degraded Forest	0.00	159.05	0.00	159.05
Water	0.00	0.00	6.37	6.37
Total of 2008	858.71	160.08	6.37	1025.16
Net Change	-1.03	1.03	0.00	

Table 6.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of 13th Nov 2007)	2008 (Data of 7th Nov 2008)			Total of 2007
	Green	Barren	Water	
Green	926.64	0.61	0.00	927.25
Barren	0.00	91.54	0.00	91.54
Water	0.00	0.00	6.37	6.37
Total of 2008	926.64	92.15	6.37	1025.16
Net Change	-0.61	0.61	0.00	

Table 6.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
KADAM Range							
Alampally(E)	2579.89	50.11	1871.25	252.36	2173.72	0.00	47.08
Alampally(W)	2917.22	5.53	1654.33	499.21	2159.07	0.00	13.29
Dasturabad	4103.76	1.85	717.78	182.26	901.89	0.00	94.01
Dattojipet	2923.21	60.48	2171.59	376.05	2608.12	0.00	36.16
Dildarnagar	985.37	0.00	262.23	32.86	295.09	0.00	0.00
Gangapur	4688.02	31.26	1317.66	1111.28	2460.2	0.00	192.78
Lakshnipur	2943	80.38	2318.3	369.01	2767.69	0.00	6.80
Munial	3081.3	142.9	640.13	132.33	915.34	0.00	104.75
Pandavapur	2656.47	27.05	1967.67	412.61	2407.33	0.00	108.9
Peddur	6835.22	117.3	1350.06	287.87	1755.18	-2.81	45.06
Total	33713	516.8	14271	3655.8	18444	-2.81	648.8
KHANAPUR Range							
Beernandi	3400.16	11.88	1264.85	209.69	1486.42	-7.84	87.63
Iqbalpur	1430.39	0.35	1020.9	41.51	1062.76	-26.92	0.65
Khanapur	2640.92	1.95	1330.14	256.32	1588.41	0.00	14.13
Mandapally	2559.35	1.96	1426.55	215.92	1644.43	-4.42	9.98
Maskapur	3525.22	0.00	693.53	183.72	877.25	0.00	4.60
Muthyampet	4486.31	7.25	1124.03	237.43	1368.71	-18.41	30.35
Nagapur	2402.75	19.32	2026	185.99	2231.31	0.00	3.04
Pochampally	2123.02	4.97	1067.68	322.75	1395.4	0.00	68.90
Rajura	2295.61	1.13	1318.11	133.47	1452.71	0.00	20.22
Sattanpally	3222.87	10.07	921.35	326.5	1257.92	0.00	19.58
Singapur	2679.87	12.01	1558.88	218.68	1789.57	0.00	15.55
Somwarpet	1670.14	2.4	1150.91	208.51	1361.82	0.00	50.40
Total	32437	73.29	14903	2540.5	17517	-57.59	325
MAMDA Range							
Arepally	10819.5	3.02	701.32	899.59	1603.93	0.00	553.28
Bandal khanapur	6837.75	2.28	1163.65	635.31	1801.24	0.00	140.78
Boregaon	5823.77	5.87	723.91	558.59	1288.37	0.00	337.13
Dimmadurthy	1771.16	3.28	1087.9	212.45	1303.63	-7.72	15.96
Gaidpally	2298.11	0.00	72.5	455.93	528.43	0.00	512.97
Kappanpally	2405.2	2.46	1550.23	80.98	1633.67	-7.88	6.70
Mamda	1582.24	2.92	1011.21	221.03	1235.16	0.00	27.58
Medpally	2708.61	0.00	1497.85	207.39	1705.24	-7.40	101.67
Naldurthy	6598.25	9.23	1726.61	533.94	2269.78	-13.08	60.39
Ranapur	1524.1	0.00	814.74	172.66	987.4	0.00	74.39
Total	42369	29.06	10350	3977.9	14357	-36.08	1831
NIRMAL Range							
Bamini	23649.3	0.00	300.1	248.68	548.78	0.00	93.75
Chincholi	13759.2	0.00	818.35	209.69	1028.04	0.00	92.97



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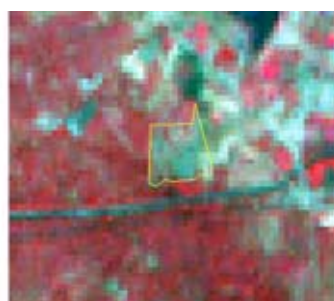
Dhani	5552.64	0.00	1148.34	266.52	1414.86	0.00	158.32
Dilawarpur	14822.9	0.00	55.64	232.39	288.03	0.00	173.72
Doderna	10373.3	0.00	532.73	349.97	882.7	0.00	134.22
Jam	4057.51	0.00	1038.25	198.49	1236.74	0.00	180.94
Jewly	5998.23	0.00	664.29	308.81	973.1	0.00	326.18
Koutla	5640.16	0.00	1050.98	320.21	1371.19	0.00	226.38
Kubeer	36116.1	0.00	809.03	827.21	1636.24	0.00	317.32
Kuntala	6106.24	0.00	928.99	501.9	1430.89	0.00	357.21
Mogli	60584.4	0.00	44.33	236.47	280.8	0.00	214.32
Narsapur	6715.48	0.00	132.2	344.35	476.55	0.00	306.78
Neelaipect	8323.15	0.00	659.29	134.67	793.96	-2.06	90.77
Ola	11682.4	0.00	1027.93	616.11	1644.04	0.00	400.35
Pyaramoor	4521.11	0.00	193.08	274.5	467.58	0.00	271.77
Total	217902	0.00	9403.5	5070	14474	-2.06	3345
PEMBI Range							
Domdhari	3801.04	4.08	2736.56	697.11	3437.75	0.00	34.96
Englapur	2135.38	0.13	1380.27	478.93	1859.33	0.00	54.09
Itkial	3154.46	1.24	1401.71	833.83	2236.78	0.00	115.43
Paspula	3405.35	17.00	2686.21	337.65	3040.86	-5.16	66.90
Pembi	4809.68	0.72	2817.23	734.83	3552.78	0.00	111.95
R.d.nala	2027.28	0.00	1169.09	749.52	1918.61	0.00	35.61
Raidhari	2391.9	61.40	1498.27	289.55	1849.22	0.00	127.65
Tatiguda	2567.48	11.85	1397.33	416.35	1825.53	0.00	21.33
Yapaguda	1849.43	1.96	1084.19	376.38	1462.53	0.00	33.73
Total	26142	98.38	16171	4914.2	21183	-5.16	601.7
Grand Total	352563	717.5	65098	20158	85974	-103.7	6751

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	78.56722
Latitude	19.07801
Area_Ha	6.21
Class	Open to NF
Comp_No	948
Beat	Dimmadurthy
Range	Mamda
Division	Nirmal

7. Ananthapur Division

Ananthapur Circle

Introduction: Ananthpur Forest Division lies in the South Western Part of Andhra Pradesh state, between latitudes 13°40'52.32" and 15°14'0.24"N and longitudes 78°45'39.96" and 78° 28' 14.52"E. The Geographical Area of the Division and the District is 19130 Km². The Division's northern and central portions are a high plateau, generally undulating, with large granite rocks or low hill ranges rising occasionally above its surface. In the southern portion of the district the surface is more hilly, the plateau there rising 0.61 m above MSL. Six rivers flow within the district: Penna, Chithravathi, Vedavathi, Papagni, Swarnamuki, and Thadakeru.

Land use pattern of the division is given in **Table 7.1**. The climate of this Division is generally dry with temperatures ranging from 29.1° C to 40.3°C and the annual rainfall is about 553.00 mm, receiving from Southwest monsoons (338 mm) and North East monsoon (156.0 mm). The failure of the rains in this South West monsoon period of June to September leads the District to drought by failure of crops.

The District may be divided into 3 Natural Divisions. They are 1) Northern portion of Black Cotton soils (2) Central portion mainly made up of arid region with poor Red Soils consisting (3) High Level Land connecting with Mysore

plateau at higher elevation having sandy red soils of normal productivity.

The soils in Anantapur District are predominantly red soils (76%) and black soils (24%) occur in certain areas.

The total population of the Division & District is 3.640 million (2001 Census). The Per capita forest area is 0.054 ha. The population density is 190 persons per Km². The livestock population is 8.25 million.

Recorded Forest Area: The total notified forest area of the Division is 1969.78 Km², which is 10.3% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 1921.48 Km² (77.64%), 14.73 Km² (15.55%) and 33.57 Km² (6.81%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical Moist deciduous, Tropical Semi-evergreen and Tropical Thorn Forest types.

Protected Area: There are no Protected Areas in the Division

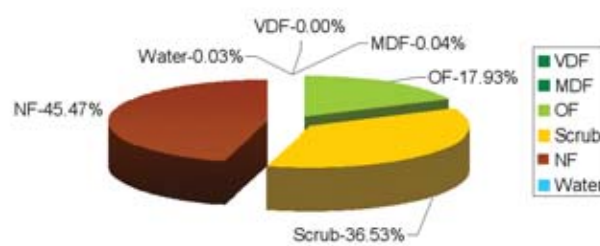
Community Forest Management: There are 281 **Vana Samrakshana Samities (VSSs)** in the Division covering an area of 628.35 Km² forest area, which constitutes 32 % of forest area.

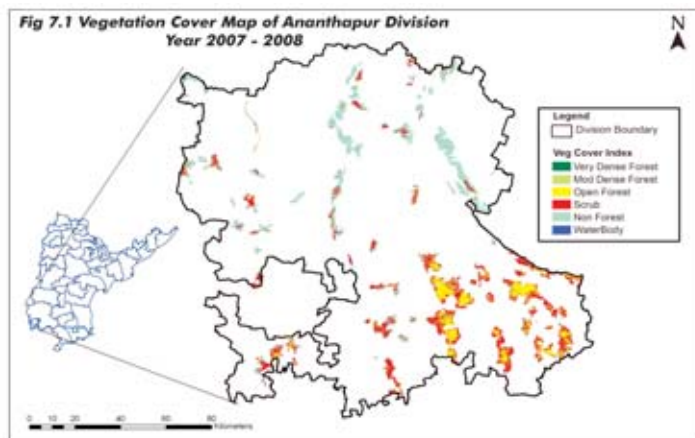
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 349.59 Km², which is 1.83% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.87 Km² of Moderately Dense Forests and 348.87 Km² of Open Forests. The area of the Scrub is 710.69 Km², Non-Forest 884.68 Km² and Water Bodies 0.50 Km². The distribution of the forest cover of the division is shown in **Figure 7.1**.

- The **distribution of Forest Cover** in the JFM/CFM areas is 0.33 Km² in Moderately Dense Forests & 76.58 Km² in Open Forests. The area of the Scrub is 235.06 Km², 298.41 Km² is Non-Forests and 0.102 Km² in Water bodies.
- **Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of data of 2007 (Satellite Imagery of Nov 2007 - Jan 2008), Shows a Net Loss of 13.83 Ha during the period

Table 7.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	19130.00	
Forest including Scrub	1060.42	5.54
Agriculture	15173.67	79.32
Land with Scrub	1286.08	6.72
Fallow Lands	802.60	4.20
Grasslands	28.66	0.15
Settlements	58.89	0.31
Vegetation outside Forest	134.32	0.70
Water bodies	585.36	3.06





of one year. • The **change matrix**, given in **Table 7.2.** reveals that there has been a decrease of 0.14 Km² of open forest. • The **simplified forest cover change matrix** is given in **Table 7.3.** and **Table 7.4.**

• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments.

• There are **72 Beats** in the Division. There is no change in Forest Cover in 71 Beats. There is Negative change in 13.83 Ha in only 1 Beat,

Kanekal during the period. • Beat wise forest cover in 2008, different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment, is given in **Table 7.5.**

Table 7.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	0.87	0.00	0.00	0.00	0.00	0.87
Open Forest	0.00	0.00	348.72	0.09	0.05	0.00	348.86
Scrub	0.00	0.00	0.00	710.69	0.00	0.00	710.69
Non-Forest	0.00	0.00	0.00	0.00	884.68	0.00	884.68
Water	0.00	0.00	0.00	0.00	0.00	0.50	0.50
Total of 2008	0.00	0.87	348.72	710.78	884.73	0.50	1945.60
Net Change	0.00	0.00	-0.14	0.09	0.05	0.00	0.00

Table 7.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	349.59	0.14	0	349.73
Degraded Forest		1595.37	0	1595.37
Water	0	0	0.5	0.50
Total of 2008	349.59	1595.51	0.50	1945.60
Net Change	-0.14	0.14	0	

Table 7.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1060.37	0.05	0	1060.42
Barren		884.68	0	884.68
Water	0		0.50	0.50
Total of 2008	1060.37	884.73	0.50	1945.60
Net Change	-0.05	0.05	0	

Table 7.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ANANTHPUR Range							
Bhadrapuram	24886.42	0.00	0.00	0.91	0.91	0.00	671.11
Daddithota	15453.88	0.00	0.92	0.47	1.39	0.00	119.75
Darsinamala	44884.24	0.00	0.00	240.19	240.19	0.00	1,317.87
Durgam	62247.87	0.00	0.00	188.53	188.53	0.00	893.98
Ganginenipalli	15406.34	0.00	1.34	1,087.07	1,088.41	0.00	1,105.69
Kondapalli	13624.55	0.00	0.00	0.00	0.00	0.00	563.93
Marutla south	26848.65	0.00	0.00	0.00	0.00	0.00	86.36
Matutla north	30794.97	0.00	0.00	4.98	4.98	0.00	110.94
Ramagiri east	49351.83	0.00	0.00	13.86	13.86	0.00	658.07
Ramagiri west	24016.69	0.00	0.00	0.00	0.00	0.00	382.44
Singanamala	52521.09	0.00	0.00	11.72	11.72	0.00	1,199.28
Singavaram	7324.25	0.00	3.58	6.76	10.34	0.00	128.06
Voddipalli	49905.86	0.00	0.00	3.25	3.25	0.00	937.53
Yellutla	9262.24	0.00	5.66	47.91	53.57	0.00	716.67
Total	426,528.87	0.00	11.50	1,605.65	1,617.15	0.00	8,891.68
BUKKAPATNAM Range							
Amagondapalem (E)	8379.99	0.00	3.67	2,144.28	2,147.95	0.00	1,577.57
Amagondapalem (W)	14580.77	0.00	0.00	554.25	554.25	0.00	1,910.48
Bukkapatnam	10148.56	0.00	1.05	2,661.26	2,662.31	0.00	704.75
Earlampalli	2952.08	0.00	0.50	777.29	777.79	0.00	697.95
Gangiredepalli	16793.11	0.00	4.10	2,488.06	2,492.16	0.00	2,211.12
Gunipalli	14861.50	0.00	0.00	510.89	510.89	0.00	1,276.32
Kondakamarla	10951.50	0.00	22.26	1,132.39	1,154.65	0.00	793.19
Mylsamudram	10909.83	0.00	2.98	881.31	884.29	0.00	612.09
Nallamada	6086.84	0.00	1.22	1,640.18	1,641.40	0.00	1,156.15
Narasampalli	4756.83	0.00	0.99	1,005.58	1,006.57	0.00	914.35
Pamudurthi	14080.26	0.00	0.00	560.17	560.17	0.00	1,977.86
Total	114,501.26	0.00	36.77	14,355.66	14,392.43	0.00	13,831.83
GOOTY Range							
Anumpalli	31643.41	0.00	0.00	5.88	5.88	0.00	996.05
Jakkalachruvu	31284.37	0.00	0.00	17.10	17.10	0.00	388.63
Maddipalli	24496.21	0.00	0.00	0.50	0.50	0.00	109.44
Mutchiukota(s)	13908.38	0.00	0.00	9.42	9.42	0.00	197.76
Mutchukunta	19708.45	0.00	0.00	1.79	1.79	0.00	162.25
Nagasamudram	69427.73	0.00	0.00	31.28	31.28	0.00	595.63
Pandikunta	74983.21	0.00	0.01	7.65	7.66	0.00	536.79
	39230.33	0.00	0.00	92.97	92.97	0.00	747.18
Yadiki	52227.73	0.00	1.67	28.20	29.87	0.00	753.41
Yellanur	32291.06	0.00	0.00	12.73	12.73	0.00	26.28
Total	389,200.87	0.00	1.68	207.52	209.20	0.00	4,513.42



KADIRI Range							
Chamalagondi	11348.69	0.00	0.00	1,165.07	1,165.07		1,345.81
Charupalli	18880.04	0.00	0.00	157.34	157.34	0.00	727.88
Dorigallu east	10841.22	0.00	0.00	232.76	232.76	0.00	1,559.16
Dorigallu west	34970.40	0.00	0.00	24.94	24.94	0.00	833.26
Edurudona	10761.13	0.00	1.27	1,274.78	1,276.05	0.00	2,307.17
Kalasangam	5229.58	0.00	5.26	1,179.88	1,185.14	0.00	821.60
Kokkanti	24049.77	0.00	0.00	1,754.05	1,754.05	0.00	2,178.33
Kuntlapalli	10340.25	0.00	11.26	2,801.61	2,812.87	0.00	1,715.49
Kurli	8531.02	0.00	4.77	1,232.79	1,237.56	0.00	1,611.74
Peddannavaripalli	15271.79	0.00	0.55	1,235.46	1,236.01	0.00	1,396.03
Tallakalva	19497.03	0.00	0.00	538.28	538.28	0.00	1,948.92
Talupula	9305.14	0.00	0.00	575.42	575.42	0.00	842.49
Tanakallu	21938.53	0.00	2.11	826.10	828.21	0.00	1,330.79
Thummala (S)	9360.40	0.00	1.00	735.04	736.04	0.00	1,104.42
Tummala(N)	43215.64	0.00	2.98	694.71	697.69	0.00	1,919.63
Tummalabailu	8699.64	0.00	0.00	199.50	199.50	0.00	1,019.84
Tummalal(S)	22888.47	0.00	0.50	1,148.27	1,148.77	0.00	1,756.76
Total	285,128.73	0.00	29.70	15,776.00	15,805.70	0.00	24,419.32
KALYANDURG Range							
Beluguppa	35832.02	0.00	0.00	13.94	13.94	0.00	326.24
Dharmapuri	40202.11	0.00	0.00	99.95	99.95	0.00	1,113.74
Jambugumpala	27990.17	0.00	0.00	141.79	141.79	0.00	1,071.48
Kalyanadurg	49510.22	0.00	0.00	37.57	37.57	0.00	994.96
Kanekal	59069.87	0.00	1.97	263.26	265.23	-13.83	506.58
Khaireru	57642.98	0.00	0.00	21.18	21.18	0.00	680.78
Obulapuram	29768.84	0.00	0.00	3.90	3.90	0.00	465.22
Pillalapalli	26840.61	0.00	0.00	44.93	44.93	0.00	352.33
Rayadurg	39334.26	0.00	0.00	147.42	147.42	0.00	1,018.38
Settur	23353.28	0.00	0.00	2.72	2.72	0.00	346.82
Total	389,544.38	0.00	1.97	776.66	778.63	-13.83	6,876.53
PENUKONDA Range							
Gundumala	10633.44	0.00	0.00	533.94	533.94	0.00	1,305.86
Guttur	21570.76	0.00	0.00	178.69	178.69	0.00	1,437.42
Madakasira	27914.35	0.00	0.00	382.95	382.95	0.00	977.87
Mandlapalli	33464.33	0.00	0.00	27.50	27.50	0.00	979.98
Penukonda	74770.44	0.00	0.00	215.39	215.39	0.00	2,406.41
Rallapalli	8771.55	0.00	0.00	131.97	131.97	0.00	495.09
Rolla	27142.69	0.00	0.00	11.06	11.06	0.00	553.23
Somandepalli	20597.55	0.00	0.00	67.69	67.69	0.00	1,074.85
Yerrakonda (N)	34278.57	0.00	3.99	283.79	287.78	0.00	2,093.11
Yerrakonda (S)	48952.20	0.00	0.89	332.03	332.92	0.00	1,212.86
Total	308,095.88	0.00	4.88	2,165.01	2,169.89	0.00	12,536.68
Grand Total	1,913,000.00	0.00	86.50	34,886.50	34,973.00	-13.83	71,069.46

*Net Change in Forest Cover Only i.e., VDF, MDF and OF to Scrub and Non-Forest between 2007 and 2008

8. Chittoor (W) Division

Ananthapur Circle

Introduction: Chittoor West Forest Division lies on the Southern Part of Andhra Pradesh state, between latitudes 12° 37' 22" and 13° 59' 37.76"N and longitudes 78° 40' 12" and 79° 08' 35.52" E. The Geographical Area of the Division is 7944 Km², which constitutes 52.32% of the total area of the District. Terrain may be roughly divided in to Hills and plateaus and Outer slopes and Outliners. The Eastern Ghats traverse this division from South-West to North – east. Palmaner, Punganur, Madanapalli Plateaus are continuous of the Mysore Plateau. The elevation of the division varies from 305m on plains to 1377m on the hills. One of the prominent hills in the Division is Horsley Hill 1314 m above MSL.

Land use pattern of the division is given in **Table 8.1.**

The climate of the Division is equable, healthy and pleasant. The maximum temperature recorded in the division 44°C to 46°C. The average rainfall of the division is 730mm.

The **soils** in the Division are red loamy, red sandy and black clay black loamy, black sandy and red clay.

The population of the Division is 1.739 million (2001 Census), which consists of 0.876 million males and 0.862 million females, which constitutes 46.45% of the total population of the District. The per capita forest area is 0.118 ha. The Population density is 219 persons per Km².

Table 8.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	7944.00	
Forest including Scrub	1807.19	22.75
Agriculture	4377.76	55.11
Land with Scrub	855.53	10.77
Fallow Lands	593.37	7.47
Grasslands	11.69	0.15
Settlements	11.63	0.14
Vegetation outside Forest	88.07	1.11
Water bodies	198.77	2.50

Recorded Forest Area: The total notified forest area of the Division is 2068 Km², which is 26% of the total geographical area. Reserved, Protected and Unclassed Forests Constitute 1510.5 Km² (73%), 550.85 Km² (26.64%) and 6.72 Km² (0.32%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Dry tropical South Indian dry mixed deciduous forests, Southern catch thorn forest groups & Tropical dry evergreen forests.

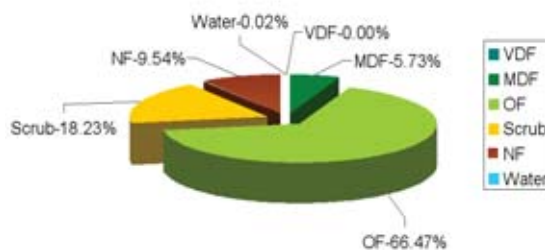
Protected Area: Out of 2068 Km² of notified Forest area, 815.50 Km² is included in the Koundinya Wildlife Sanctuary.

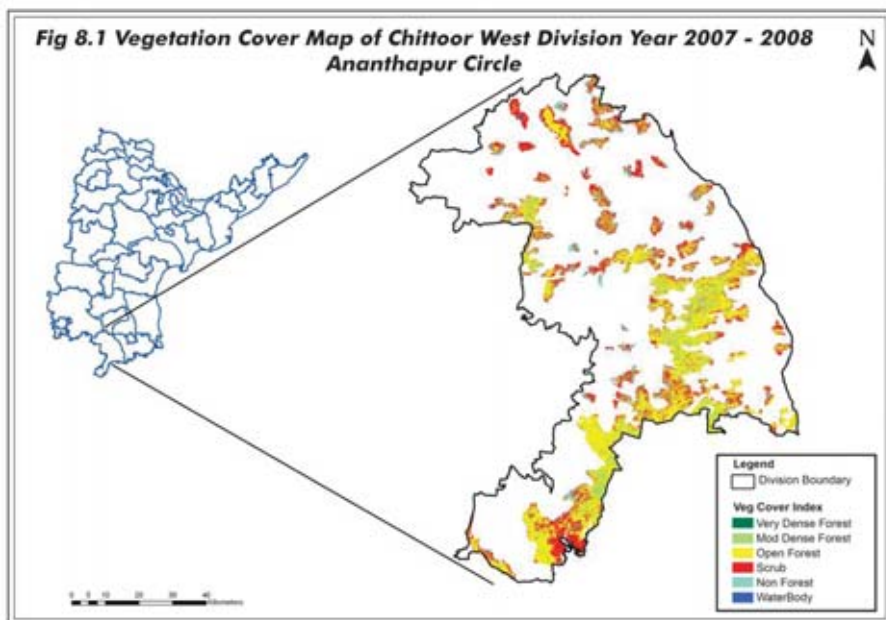
Community Forest Management: There are **119 Forest Protection Committees (FPCs)** or Vana Samrakshana Samities (VSSs) in the Division. An area of 222.34 Km² forests, which is 9.3 % of the notified forests, is under the management of the VSSs.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 1161.14 Km², which is 14.61% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.03 Km² of Very Dense Forests, 197.72 Km² of Moderately Dense Forests, and 963.39 Km² of Open Forests. The area of the Scrub is 646.05 Km², Non-Forest 280.20 Km² and Water Bodies 2.37 Km². The distribution of the forest cover of the division is shown in **Figure 8.1.**

- The **Forest Cover** in the JFM/CFM areas is 33.65 Km² in Moderately Dense Forests & 197.17 Km² in Open Forests. The area of the Scrub is 146.84 Km², 71.43 Km² is Non-Forest and 0.68 Km² Water bodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of data of 2007 (Satellite Imagery





of Nov 2007- Jan 2008), shows no change in forest cover during the period of one year.

- The **change matrix**, given in Table 8.2 reveals that there has no change of Forest cover between 2007 and 2008.
- The **simplified forest cover change matrix** is given in Table 8.3 and Table 8.4.
- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in Table 8.5.

Table 8.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.03	0.00	0.00	0.00	0.00	0.00	0.03
Moderately Dense Forest	0.00	197.72	0.00	0.00	0.00	0.00	197.72
Open Forest	0.00	0.00	963.39	0.00	0.00	0.00	963.39
Scrub	0.00	0.00	0.00	646.05	0.00	0.00	646.05
Non-Forest	0.00	0.00	0.00	0.00	280.20	0.00	280.20
Water	0.00	0.00	0.00	0.00	0.00	2.37	2.37
Total of 2008	0.03	197.72	963.39	646.05	280.20	2.37	2089.77
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 8.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

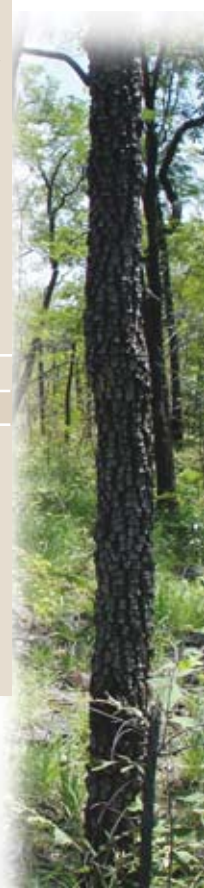
2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1161.14	0	0	1161.14
Degraded Forest		926.26	0	926.26
Water	0	0	2.37	2.37
Total of 2008	1161.14	926.26	2.37	2089.77
Net Change	0	0	0	0

Table 8.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1807.19	0.00	0.00	1807.19
Barren		280.20	0.00	280.20
Water	0.00		2.37	2.37
Total of 2008	1807.19	280.20	2.37	2089.77
Net Change	0.00	0.00	0.00	

Table 8.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHITTOOR(W) Range							
Bodabanda	10204.50	0.00	192.49	1,435.20	1,627.69	0.00	947.70
Chittapara	6618.75	0.00	141.55	1,797.80	1,939.35	0.00	437.92
Gollapalle	12533.99	0.00	56.53	715.44	771.97	0.00	169.97
Gundlapalle	3804.21	0.00	69.79	1,113.60	1,183.39	0.00	580.59
Irala	12411.41	0.00	96.02	1,618.70	1,714.72	0.00	652.06
Kalluru	6505.99	0.00	123.61	1,538.13	1,661.74	0.00	1,245.16
Kammappalle	2324.65	0.00	687.46	1,302.23	1,989.69	0.00	173.26
Keenatampalle	8209.14	0.00	0.58	337.84	338.42	0.00	494.44
M.V.Giri	7295.32	0.00	29.25	542.93	572.18	0.00	734.22
Madhavaram	1715.80	0.00	205.66	936.03	1,141.69	0.00	148.89
Mittoor	3129.59	0.00	221.08	837.52	1,058.60	0.00	232.11
Nagamvandlapalle	3578.20	0.00	624.99	2,020.11	2,645.10	0.00	403.80
Nampalle	4233.74	0.00	70.43	833.76	904.19	0.00	534.04
Rachoor	5625.68	0.00	123.00	959.20	1,082.20	0.00	495.41
Ragimanipenta	4407.73	0.00	531.38	1,003.56	1,534.94	0.00	154.52
Santhapeta	27502.29	0.00	33.51	1,291.81	1,325.32	0.00	1,172.86
Sarakallu	4632.30	0.00	168.62	1,226.84	1,395.46	0.00	511.32
Setteri	4173.55	0.00	144.07	1,099.72	1,243.79	0.00	576.08
Thumbakuppam	2914.34	0.00	185.52	807.73	993.25	0.00	170.88
Thumbapalem	2682.88	0.00	570.17	1,044.04	1,614.21	0.00	68.52
Total	134,504.04	0.00	4,275.71	22,462.19	26,737.90	0.00	9,903.75
KUPPAM Range							
Balla	7365.37	0.00	1.51	591.17	592.68	0.00	1,118.07
Bommadevarachenu	4930.49	0.00	12.75	1,182.92	1,195.67	0.00	2,642.19
Kadapalle	16048.66	0.00	157.37	1,575.08	1,732.45	0.00	444.81
Kangundi	2480.61	0.00	18.78	861.45	880.23	0.00	405.30
Kuppum	13573.23	0.00	96.80	1,165.75	1,262.55	0.00	132.95
Mittapalle	5522.54	0.00	287.09	2,162.27	2,449.36	0.00	133.07
Muddanapalle	4656.10	0.00	365.51	877.48	1,242.99	0.00	596.05
Nadimuru	20608.17	0.00	20.54	2,507.56	2,528.10	0.00	1,744.26
Naniyala	3427.12	0.58	1,410.66	1,715.84	3,127.08	0.00	286.09
Narayanapuram	4559.47	0.00	328.24	905.72	1,233.96	0.00	654.90
Nayanur	2796.99	0.00	151.10	1,189.44	1,340.54	0.00	1,156.52
Pandyalamadugu	16098.80	0.00	1,170.11	1,543.78	2,713.89	0.00	215.01
Peddavanka	4471.66	0.00	10.90	621.84	632.74	0.00	991.62
Peddur	4113.86	0.00	297.18	1,793.97	2,091.15	0.00	318.41
Total	110,653.07	0.58	4,328.54	18,694.27	23,023.39	0.00	10,839.25
MADANAPALLE Range							
Chalimamidi	17132.65	0.00	73.71	697.50	771.21	0.00	1,169.85
Cheekalabylu	10371.20	0.00	267.27	1,133.39	1,400.66	0.00	956.61
Ellutla	5124.78	0.00	27.23	692.69	719.92	0.00	944.50
Kalicherla	8900.86	0.00	23.06	893.30	916.36	0.00	1,653.41
Kalikiri	35559.17	0.00	10.97	931.37	942.34	0.00	1,704.85
Kandlamadugu	9220.31	0.75	252.49	897.58	1,150.82	0.00	419.22
Kottala	14319.57	0.00	14.37	1,240.88	1,255.25	0.00	1,360.84
Marripadu	19147.72	0.00	0.00	104.93	104.93	0.00	1,689.92



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Nadimicherla	12133.35	0.00	7.85	754.39	762.24	0.00	1,349.23
Nerdikonda	17684.50	0.00	0.00	285.31	285.31	0.00	1,828.63
Noorukuppalakonda	19588.22	0.00	5.55	850.39	855.94	0.00	1,575.79
Penchupadu	10099.70	0.00	261.79	1,053.57	1,315.36	0.00	915.42
Plateau	628.30	0.58	197.46	282.16	480.20	0.00	68.64
Ramaganipalle	26538.03	0.00	4.57	251.69	256.26	0.00	1,120.31
Sangasamudram	10708.24	0.00	8.78	350.58	359.36	0.00	1,142.22
Tarigonda	16945.86	0.00	5.72	494.20	499.92	0.00	1,282.47
Tavalam	12850.33	0.00	241.37	1,952.82	2,194.19	0.00	748.03
Thambalpalle	7603.48	0.00	28.99	1,699.97	1,728.96	0.00	1,187.09
Thettu	7895.25	0.64	502.48	1,588.28	2,091.40	0.00	589.14
Vepurikota	48549.58	0.00	1.85	378.20	380.05	0.00	1,861.11
Total	311,001.11	1.97	1,935.51	16,533.20	18,470.68	0.00	23,567.28
PALAMANER Range							
Doddipalle	5821.20	0.00	75.49	1,029.87	1,105.36	0.00	735.66
Engamvaripalle	4015.56	0.00	614.45	2,254.37	2,868.82	0.00	169.65
Jagamarla	5384.81	0.00	1,070.78	2,211.65	3,282.43	0.00	365.64
Kalavapalle	5395.17	0.00	58.89	1,564.68	1,623.57	0.00	1,007.92
Keelapatla	8245.73	0.00	1,168.69	2,068.46	3,237.15	0.00	451.33
Kolamasinapale	5688.90	0.00	70.74	810.57	881.31	0.00	888.13
M.kothur	3965.28	0.00	275.18	2,769.10	3,044.28	0.00	616.28
Nellipatla	6657.06	0.00	496.98	2,010.16	2,507.14	0.00	776.81
P.n.d north	6040.01	0.00	247.08	2,367.69	2,614.77	0.00	67.86
P.n.d south	6877.85	0.00	988.11	2,117.82	3,105.93	0.00	62.38
Palamaner	4212.69	0.00	186.53	1,083.96	1,270.49	0.00	972.13
Pathikonda	11287.71	0.00	7.61	249.20	256.81	0.00	979.88
Tekumanda	2858.96	0.00	171.73	1,572.66	1,744.39	0.00	978.91
Thotakanuma	14016.81	0.00	201.70	1,487.37	1,689.07	0.00	595.89
Total	90,467.72	0.00	5,633.96	23,597.56	29,231.52	0.00	8,668.47
PUNGANUR Range							
Arantlapalle	21167.70	0.00	22.04	434.99	457.03	0.00	1,199.49
Chandramakulapalle	9487.80	0.00	0.00	121.29	121.29	0.00	978.35
Charala	11426.10	0.00	78.86	816.54	895.40	0.00	650.62
Chembakuru	12437.88	0.00	150.48	712.56	863.04	0.00	369.73
Gollapalle	2090.97	0.00	141.30	1,489.09	1,630.39	0.00	982.76
Gurujulavaripalle	7396.08	0.00	43.64	644.93	688.57	0.00	534.71
Kanduru	10420.18	0.00	95.90	1,196.96	1,292.86	0.00	1,353.49
Madirimalai(E)	6061.44	0.00	328.83	1,677.30	2,006.13	0.00	708.41
Madirimalai(W)	4804.34	0.00	585.90	1,040.73	1,626.63	0.00	252.78
Muthukur	21668.08	0.00	0.00	61.32	61.32	0.00	556.68
Petur	2807.63	0.00	410.67	1,050.98	1,461.65	0.00	275.69
Rampalle	3924.52	0.00	579.69	1,696.00	2,275.69	0.00	326.84
Rayolpeta	8963.25	0.00	118.54	1,400.79	1,519.33	0.00	636.70
Somala	11814.89	0.00	29.89	1,182.60	1,212.49	0.00	1,647.03
Upparapalle	4210.91	0.00	1,010.80	1,381.39	2,392.19	0.00	271.43
Valligatla	9092.29	0.00	2.31	146.26	148.57	0.00	879.94
Total	147,774.05	0.00	3,598.85	15,053.73	18,652.58	0.00	11,624.65
Division total	794,400.00	2.55	19,772.57	96,340.95	116,116.07	0.00	64,603.40

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

9. Achampet WLM Division

Srisailam Circle

Introduction: Achampet Forest Division lies in the south eastern part of Mahabubnagar District, between latitudes 16° 08' 50" and 16° 37' 45" N and longitudes 78° 4' 30" and 78° 58' 50" E. The Geographical Area of the Division is 4303.47 Km², which is 23.35 % of the geographical area of the District. The Division has two physiographic zones, the Amrabad plateau of Nallamalai hills having an altitude of 500 to 876 m and the plains having an altitude of 200 to 500 m. The River Krishna forms Southern boundary of the Division as well as the District. Major tributaries of Krishna falling in Division are Dindi, Bhumunikolanu vagu, Nallavagu, Buggavagu, and Yemulapayavagu. **Land use pattern** of the division is given in **Table 9.1**.

The climate of this Division is generally dry with temperatures ranging from 16.9° C to 45°C and the annual rainfall is about 700 mm, received mainly from Southwest monsoons.

Srisailam quartzite occupies most part of the Division. The soil types found mainly are Black cotton, Red and Brown sandy loam.

The total population of the Division is 0.43 million (2001 Census), which constitutes about 12.25 % of the total population of the District. The Per capita forest area is 0.53 ha. The population density is 100 persons per Km². The livestock population is 4.82 million.

Table 9.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	4303.47	
Forest including Scrub	2293.29	53.29
Agriculture	804.03	18.68
Land with Scrub	236.07	5.49
Fallow Lands	102.87	2.39
Grasslands	127.72	2.97
Settlements	4.03	0.09
Not available for cultivation	645.24	14.99
Rivers/Streams	90.22	2.10

Recorded Forest Area: The **total notified forest area** of the Division is 2423.36 Km², which is 56.31% of the total geographical area. Reserved-, Protected- and Un-classed forests constitute 1881.51 Km² (77.64%), 376.72 Km² (15.55%) and 165.03 Km² (6.81%) of the total forest area, respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical Moist deciduous, Tropical Semi-evergreen and Tropical Thorn Forest types.

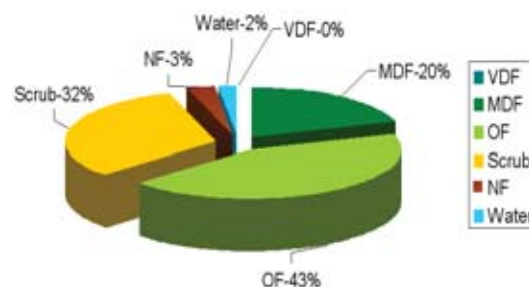
Protected Area: The Division is one of the four constituent Divisions of Nagarjuna Sagar – Srisailam Tiger Reserve (NSTR), the biggest Tiger Reserve of India. Out of 2,423.36 Km² of forest area, 1750 Km² is included in the Tiger Reserve.

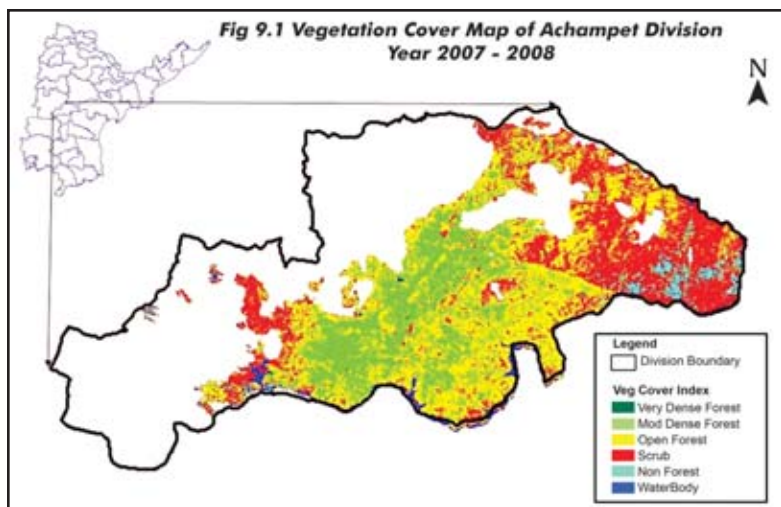
Community Forest Management: There are 79 Vana Samrakshana Samities (VSSs) in the Division. 216.73 Km² forest area, which constitutes 8.95 % of forest area, is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 1511.58 Km², which is 35.16% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.33 Km² of Very Dense Forests, 479.11 Km² Moderately Dense Forests, and 1032.14 Km² Open Forest. The area of the Scrub is 782.23 Km², that of Non-Forest 69.60 Km² and Water Bodies 59.96 Km². The distribution of the forest cover of the Division is shown in **Figure 9.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows:- 38.68 Km² in Moderately Dense Forests, 93.79 Km² in Open Forests. The area of the Scrub is 76.90 Km², Non-Forest 4.05 Km² and Water bodies 3.29 Km².

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite data of Nov 2007 - Dec 2007), shows a net loss of 169 Ha of





forest cover during the period of one year.

- The forest cover change matrix, given in **Table 9.2** reveals that there has been a decrease of 1.31 Km² of moderately dense forest and 0.38 Km² of open forest.
- The simplified forest cover change matrix is given in **Table 9.3** and **Table 9.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments.

- There are 40 Beats in the division. Negative change in Forest cover is seen in 7 Beats and no change in 33 Beats. Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 9.5**.

Table 9.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.33	0.00	0.00	0.00	0.00	0.00	0.33
Moderately Dense Forest	0.00	479.11	0.00	0.40	0.91	0.00	480.42
Open Forest	0.00	0.00	1032.14	0.12	0.26	0.00	1032.52
Scrub	0.00	0.00	0.00	781.71	0.00	0.00	781.71
Non-Forest	0.00	0.00	0.00	0.00	68.43	0.00	68.43
Water	0.00	0.00	0.00	0.00	0.00	59.96	59.96
Total of 2008	0.33	479.11	1032.14	782.23	69.60	59.96	2423.37
Net Change	0.00	-1.31	-0.38	0.52	1.17	0.00	0.00

Table 9.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1511.58	1.69	0	1513.27
Degraded Forest		850.14	0	850.14
Water	0	0	59.96	59.96
Total of 2008	1511.58	851.83	59.96	2423.37
Net Change	-1.69	1.69	0	

Table 9.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	2293.81	1.17	0	2294.98
Barren		68.43	0	68.43
Water	0	0	59.96	59.96
Total of 2008	2293.81	69.60	59.96	2423.37
Net Change	-1.17	1.17	0	

Table 9.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ACHAMPET Range							
Achampet	160.14	0.00	500.01	897.54	1,397.55	0.00	150.55
Banala(n)	50.84	0.00	865.58	732.47	1,598.05	0.00	37.99
Banala(s)	21.16	0.00	1,568.81	501.60	2,070.41	0.00	34.49
Billakal	23.11	0.00	582.00	463.39	1,045.39	0.00	51.38
Bommanapally	148.94	0.00	516.96	1,376.04	1,893.00	0.00	210.30
Choutapally	18.20	0.00	1,297.53	535.80	1,833.33	0.00	29.82
Ganapur	40.19	0.00	14.59	1,313.64	1,328.23	0.00	1,600.59
Inole	13.29	0.00	11.72	241.10	252.82	0.00	1,077.52
Kondanagul	156.47	0.00	432.91	994.94	1,427.85	0.00	132.52
Mannevari pally	57.42	0.15	18.29	1,354.19	1,372.63	0.00	2,191.08
Rangapur	148.51	0.00	1,173.28	913.00	2,086.28	0.00	144.58
Siddapur-(E)	50.62	0.66	231.48	1,214.70	1,446.84	0.00	1,199.95
Siddapur-(W)	17.22	0.00	8.63	534.29	542.92	0.00	1,145.73
Total	906.09	0.81	7,221.79	11,072.70	18,295.30	0.00	8,006.50
AMRABAD Range							
Amrabad	92.71	0.00	726.04	3,210.54	3,936.58	0.00	2,833.89
Domarlagundi	71.06	2.82	8.84	1,035.14	1,046.80	0.00	4,764.48
Ippalapally	21.91	0.00	1.00	658.16	659.16	0.00	1,258.65
Kollampenta	57.08	0.00	1,685.39	1,426.44	3,111.83	0.00	492.08
Macharam-(N)	29.92	0.00	254.66	1,219.20	1,473.86	-20.85	1,276.44
Macharam-(S)	85.47	0.00	693.55	2,462.42	3,155.97	-21.08	1,675.37
Maddimadugu	168.43	0.51	55.70	1,542.03	1,598.24	0.00	10,316.09
Maredugu	165.20	0.00	69.91	5,345.86	5,415.77	0.00	9,449.10
New road farhabad	44.82	0.00	2,427.35	1,725.33	4,152.68	0.00	394.82
Padara	139.24	0.00	217.92	2,921.82	3,139.74	-19.59	5,127.45
Tirmalapur	114.39	0.00	523.40	6,178.07	6,701.47	0.00	4,574.96
Ummanpenta	61.34	2.08	0.00	524.86	526.94	0.00	4,446.03
Vatvarlapally(E)	114.26	0.40	1,660.41	7,711.77	9,372.58	-38.82	2,233.11
Vatvarlapally(N)	24.03	0.00	277.79	1,815.64	2,093.43	0.00	368.03
Total	1189.86	5.81	8,601.96	37,777.28	46,385.05	-100.34	49,210.50
KOLLAPUR Range							
Amaragiri	22.86	0.00	9.50	393.93	403.43	0.00	1,058.67
Ankilpenta(N)	20.62	0.00	1,886.90	212.39	2,099.29	0.00	12.31
Ankilpenta(S)	17.19	0.00	1,285.14	449.09	1,734.23	0.00	26.48
Bollaram	37.68	0.28	654.58	1,586.41	2,241.27	0.00	754.12
Chintapally_S-II	22.73	0.00	88.94	621.74	710.68	0.00	604.29
Chintapally-S-I	12.49	0.00	77.47	533.45	610.92	0.00	579.51
Kollapur	108.26	0.00	66.73	549.29	616.02	0.00	422.85
Medarvote	21.17	0.00	170.42	684.20	854.62	0.00	869.00
Narlapur	77.26	0.74	75.90	367.35	443.99	0.00	2,221.14
Peddavote	26.23	0.00	1,090.73	1,337.74	2,428.47	0.00	252.95
Somasila	466.84	0.78	55.27	744.49	800.54	0.00	862.73
Sukkalagundam	18.83	0.00	907.17	775.86	1,683.03	-10.33	103.28
Yeddulagundam	24.31	0.00	1,642.64	791.05	2,433.69	0.00	55.83
Yellore	75.80	0.00	2.82	58.98	61.80	0.00	629.71
Yerragundam penta	29.29	0.00	1,048.47	1,494.07	2,542.54	0.00	266.72



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Yerrapenta	56.85	0.00	2,329.67	2,846.53	5,176.20	-46.66	355.56
Yetham	68.35	0.00	2.16	23.42	25.58	0.00	600.45
Total	1106.76	1.80	11,394.51	13,469.99	24,866.30	-56.99	9,675.60
LINGAL Range							
Appaipally	11.39	0.00	429.13	616.38	1,045.51	0.00	120.73
Bacharam	64.11	0.00	0.00	143.59	143.59	0.00	1,057.29
Balmoor	18.85	0.00	230.33	480.28	710.61	0.00	47.78
Dhararam	9.79	0.00	391.65	558.24	949.89	0.00	51.08
Gorremadug S-I	65.64	0.00	20.81	580.82	601.63	-11.69	367.37
Gorremadug S-II	8.54	0.00	228.68	558.66	787.34	0.00	87.08
Lingal	171.13	0.51	135.61	1,042.91	1,179.03	0.00	721.94
Mareddinne	3.75	0.00	2.21	146.70	148.91	0.00	220.02
Marlapaya	21.24	0.00	1,323.84	799.83	2,123.67	0.00	49.18
Padmanapally	13.79	0.00	756.14	591.12	1,347.26	0.00	58.02
Rayawaram	10.72	0.00	46.69	644.09	690.78	0.00	403.83
Sathapur	104.55	1.09	20.68	306.79	328.56	0.00	1,483.51
Total	503.49	1.60	3,585.77	6,469.41	10,056.78	-11.69	4,667.83
MANNANUR Range							
Appapur	17.57	0.00	717.44	1,017.30	1,734.74	0.00	39.85
Behirapur-(N)	64.14	0.00	1,988.10	3,932.08	5,920.18	0.00	244.32
Behirapur-(S)	20.73	0.00	193.14	1,264.94	1,458.08	0.00	408.65
Burujugundal	33.13	0.00	1,759.84	1,389.39	3,149.23	0.00	244.27
Eagalapenta	38.27	2.61	279.69	2,474.90	2,757.20	0.00	711.89
Farahabad(E)	44.30	18.36	1,268.22	2,537.82	3,824.40	0.00	709.54
Farahabad(W)	21.41	0.00	771.63	1,091.08	1,862.71	0.00	329.44
Farahabad(S)	40.47	0.00	1,152.73	2,718.60	3,871.33	0.00	269.36
Mannanur-(N)	20.87	0.00	813.32	823.62	1,636.94	0.00	421.20
Mannanur-(S)	43.96	0.00	2,468.71	1,854.17	4,322.88	0.00	176.41
Pullaipally	55.11	0.00	2,270.91	3,106.15	5,377.06	0.00	266.54
Rampur	35.42	0.00	1,513.62	1,783.90	3,297.52	0.00	324.33
Sangadigundal	131.64	2.51	1,642.70	8,777.37	10,422.58	0.00	2,077.04
Vatvarlapally(S)	30.32	0.00	459.78	1,827.97	2,287.75	0.00	298.49
Total	597.34	23.48	17,299.83	34,599.29	51,922.60	0.00	6,521.33
Grand total	4303.55	33.50	48,103.86	103,388.67	151,526.03	-169.02	78,081.76

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



Farahabad View Point, Achampet



Bamboo clumps of Pulicheruvu

10. Atmakur Division

Srisailem Circle

Introduction: Atmakur Forest Division lies in the north-east Part of Kurnool District, between latitudes 16° 8' 52.8" and 15° 39' 3.6" N and longitudes 78° 55' 57" and 78° 15' 1.8" E. The Geographical Area of the Division is 2154 Km², which is 12.20 % of the total area of the District.

Land use pattern of the division is given in **Table 10.1**.

The climate of this Division is generally dry with temperatures ranging from 12° C to 43°C and the annual rainfall is about 670 mm, received mainly from Southwest monsoons.

Important minerals and rocks found in the District are iron, lime stone, steatite, barytes, quartz, asbestos, diamond and black & pink granite. The soil types found mainly are Black cotton (East and North Western), Red (South Eastern) and Brown sandy loam.

The population of the Division is 0.276 million (2001 Census), which consists of 0.142 million males and 0.134 million females, which constitutes 7.82% of the total

population of the District. The per capita forest area is 0.466 ha. The Population density is 128 persons per Km².

Recorded Forest Area: The **total notified forest area** of the Division is 1288.81 Km², which is 59.83 % of the total geographical area. Reserved, and Un-classed Forests Constitute 1204.44 Km² (93.45%), and 84.37 Km² (6.54%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical Dry Deciduous, Tropical Moist Deciduous and Tropical Thorn Forest types.

Protected Area: The Atmakur Division is one constituent Division of Gundla Brahmeswaram Wildlife Sanctuary (GBM) and Nagarjuna Sagar Tiger Reserve (NTSR) and Rollapadu WLS. Out of 1288.81 Km² of forest area, 536.16 Km² is included in Nagarjuna Sagar Tiger Reserve (NTSR) and 277.88 Km² is in Gundla Brahmeswaram Wildlife Sanctuary (GBM) & 5.20 Km² is in Rollapadu Wild Life Sanctuary.

Community Forest Management: There are 47 Forest Protection Committees (FPC) or Vana Samrakshana Samities (VSSs) in the Division. An area of 135.31 Km² forests, which is 10.5 % of the notified forests, is under the management of the VSSs.

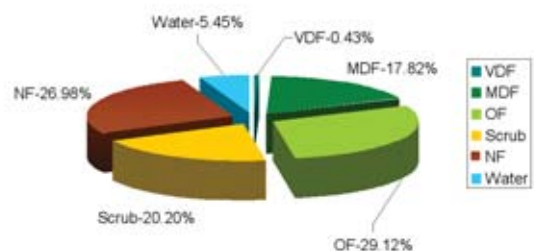
Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 609.06 Km², which is 28.27 % of the total Geographical area. In terms of the forest canopy cover density classes, the Division has 5.53 Km² of Very Dense Forests, and 229.08 Km² of Moderately Dense Forests, and 374.45 Km² of Open Forests. The area of the Scrub is 259.74 Km², Non-Forests 346.94 Km² and Water Bodies is 70.03 Km². The distribution of the forest cover of the division is shown in **Figure 10.1**.

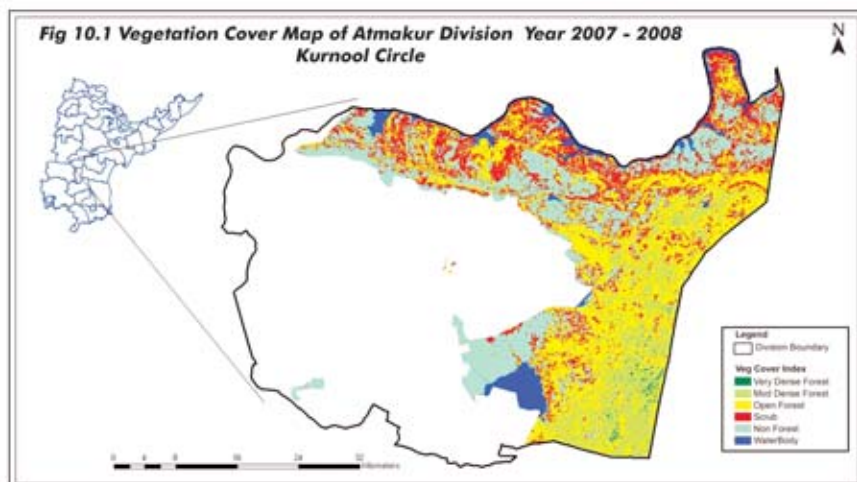
- The **distribution of the Forest Cover** in the JFM/CFM areas is as follows-0.018 Km² in Very Dense Forests, 8.3 Km² in Moderately Dense Forests, and 30.13 Km² in Open Forests. The area of the Scrub is 19.34 Km², 76.39 Km² is Non-Forest, and 1.12 Km² is Water bodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of data of 2007 (Satellite Imagery of Jan 2008), shows that there is no change between the one years.

Table 10.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2154	
Forest including Scrub	868.80	40.33
Agriculture	784.92	36.44
Land with Scrub	77.13	3.58
Fallow Lands	22.93	1.07
Grasslands	30.68	1.42
Settlements	12.89	0.60
Vegetation outside Forest	103.96	4.83
Water bodies	252.69	11.73





- The **change matrix**, given in **Table 10.2** reveals that no loss in the forests.
- The **simplified forest cover change matrix** is given in **Table 10.3** and **Table 10.4**.
- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 10.5**.

Table 10.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	5.53	0.00	0.00	0.00	0.00	0.00	5.53
Moderately Dense Forest	0.00	229.08	0.00	0.00	0.00	0.00	229.08
Open Forest	0.00	0.00	374.45	0.00	0.00	0.00	374.45
Scrub	0.00	0.00	0.00	259.74	0.00	0.00	259.74
Non-Forest	0.00	0.00	0.00	0.00	346.94	0.00	346.94
Water	0.00	0.00	0.00	0.00	0.00	70.03	70.03
Total of 2008	5.53	229.08	374.45	259.74	346.94	70.03	1285.77
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	

Table 10.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	609.06	0.00	0.00	609.06
Degraded Forest	0.00	606.68	0.00	606.68
Water	0.00	0.00	70.03	70.03
Total of 2008	609.06	606.68	70.03	1285.77
Net Change	0.00	0.00	0.00	

Table 10.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	868.80	0.00	0.00	868.80
Barren	0.00	346.94	0.00	346.94
Water	0.00	0.00	70.03	70.03
Total of 2008	868.80	346.94	70.03	1285.77
Net Change	0.00	0.00	0.00	

Table 10.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ATMAKUR Range							
Atmakur	18689.27	0.00	169.23	2,707.83	2,877.06	0.00	3,357.65
Gummadapuram	12484.85	0.00	35.59	1,049.10	1,084.69	0.00	1,786.50
Guvvalakuntla east	4527.38	0.00	58.35	883.21	941.56	0.00	1,127.45
Guvvalakuntla west	5627.88	0.00	62.51	1,626.96	1,689.47	0.00	2,409.51
Musalimadugu	35220.50	0.00	21.69	441.62	463.31	0.00	1,089.39
Sivapuram	20614.80	1.91	243.79	1,870.93	2,116.63	0.00	2,389.35
Total	97164.69	1.91	591.16	8579.65	9172.72	0.00	12159.85
BAIRLUTY Range							
Bairluty	4211.72	3.41	1,263.34	1,610.76	2,877.51	0.00	283.76
Nallakalva	4474.91	0.00	243.09	1,564.68	1,807.77	0.00	665.97
P.a.puram north	5618.26	0.00	313.62	876.75	1,190.37	0.00	404.85
P.a.puram south	1501.88	0.00	194.18	662.10	856.28	0.00	354.12
Pasurutla	5389.17	38.80	2,748.49	2,461.49	5,248.78	0.00	400.63
Rudrace	4983.99	195.88	3,102.91	1,408.11	4,706.90	0.00	344.88
Total	26179.93	238.09	7865.63	8583.89	16687.61	0.00	2454.21
NAGALUTY Range							
Indiresvaram east	3453.03	0.02	141.74	1,017.97	1,159.73	0.00	902.92
Indiresvaram west	3942.66	0.00	237.44	1,406.16	1,643.60	0.00	593.98
Nagaluty	2219.74	0.00	854.09	843.56	1,697.65	0.00	340.91
Pangidi east	4441.14	3.08	1,084.97	2,791.28	3,879.33	0.00	702.41
Pangidi west	5131.78	9.02	1,724.78	2,183.30	3,917.10	0.00	632.53
Venkatapuram	2791.12	1.84	280.98	989.09	1,271.91	0.00	397.39
Total	21979.47	13.96	4324.00	9231.36	13569.32	0.00	3570.14
SRISAILAM Range							
Pechuruvu east	7968.99	0.00	579.43	2,645.18	3,224.61	0.00	2,094.73
Pechuruvu west	6492.95	0.00	524.98	2,180.07	2,705.05	0.00	1,644.59
Srisailam	5118.30	0.00	0.91	574.55	575.46	0.00	1,365.06
Sundipenta	3384.86	0.00	27.08	685.82	712.90	0.00	1,190.67
Total	22965.10	0.00	1132.40	6085.62	7218.02	0.00	6295.05
Abbarajukunta	9786.45	95.93	2,683.03	1,240.22	4,019.18	0.00	177.58
VELGODE Range							
G.B.M. East	777.47	7.10	649.09	162.90	819.09	0.00	6.63
G.B.M. West	1377.40	11.17	1,283.06	168.54	1,462.77	0.00	1.50
Pangidi	6574.65	184.46	4,046.74	2,026.33	6,257.53	0.00	414.00
Rollapadu	20322.48	0.00	0.00	1.16	1.16	0.00	4.18
Velgode north	3365.43	0.00	14.29	381.29	395.58	0.00	393.09
Velgode south	8668.60	0.00	319.06	983.02	1,302.08	0.00	420.63
Velgode west	31154.34	0.00	0.00	0.73	0.73	0.00	76.94
Total	82026.82	298.66	8995.27	4964.19	14258.12	0.00	1494.55
Grand total	250316.00	552.62	22908.46	37444.71	60905.79	0.00	25973.80

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



11. Markapur Division

Introduction: Markapur Forest Division lies in the South Eastern Part of Prakasam District, between latitudes 15° 23' 1" and 16° 18' 16" N and longitudes 78° 47' 48" and 79° 57' 56" E. The Geographical Area of the Division is 7,218 Km², which is 25.1 % of the total area of the District. The Rivers Gundlakamma, Sagileru, Musi, Paleru and Manneru are seasonal and the Gundlakamma River rises in Nallamala hills and the Cumbum Tank is formed by a bund across the river. **Landuse pattern of the division** is given in **Table II.I.**

Table 11.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	7218	
Forest including Scrub	2014.3	27.91
Agriculture	4267.32	59.12
Land with Scrub	534.29	7.40
Fallow Lands	111.67	1.55
Grasslands	13.84	0.19
Settlements	31.10	0.43
Vegetation outside Forest	188.96	2.62
Water bodies	56.53	0.78

The climate of this Division is dry and salubrious, **temperatures** ranging from 19°C to 38°C and the annual rainfall is about 871 mm, received mainly from Southwest monsoons.

Sandstone mixed with quartzite and occasional Shale is the characteristic rock formation on the veligonda and at their extreme's bordering Kanigiri the rocks gradually change into Gneisses or Granite composition the Division. Outcrops of Barytes and Manganese ores occur in veligonda. The soil types found mainly are red loamy soil, Black cotton, sandy loam and sandy soils.

The total Population of the division is 0.773 million (2001 Census). The Per capita forest area is 0.32 ha. The population density is 107 persons per Km².

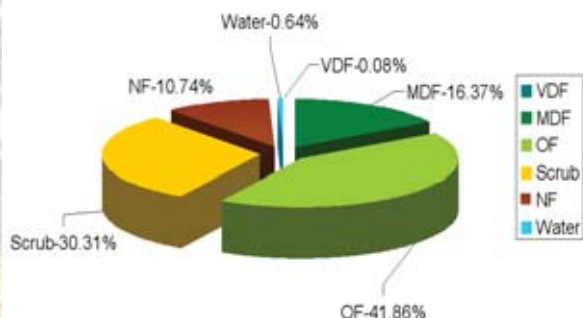
Recorded Forest Area: The total notified forest area of the Division is 2476.39 Km², which is 34.30% of the total geographical area. The total forest area is Reserved Forest.

As per Champion and Seth's classification, the Forests of Division fall under Southern Tropical dry deciduous is the predominant and climatic climax forest in the Division the Southern Tropical Thorn Forest also occurs in low elevations and in plains.

Protected Area: The Division is one of the constituent Divisions of Nagarjunasagar – Srisailam Tiger Reserve (NSTR), and Gundla Brahmeswaram Wild Life Sanctuary (GBM). Out of 2476 Km² of notified forest area 1039.51 Km² is included in the Nagarjunasagar – Srisailam Tiger Reserve and 55.45 Km² is included in the Gundla Brahmeswaram Wild Life Sanctuary (GBM).

Community Forest Management: There are 93 **Vana Samrakshna Samities** (VSSs) in the Division. An area of 347.14 Km² forests, which is 14.01 % of the notified forests, is under the management of VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 1325.69 Km², which is 18.36% of the total Geographical area. In terms of the forest cover canopy density classes the Division has 1.93 Km² of Very Dense Forests, 372.11 Km² of Moderately Dense Forests, and 951.43 Km² of Open Forests. The area of the Scrub is 688.83 Km², Non-Forest 244.06 Km² and Water Bodies 14.50 Km². The distribution of the forest cover of the division is shown in **Figure II.I.**

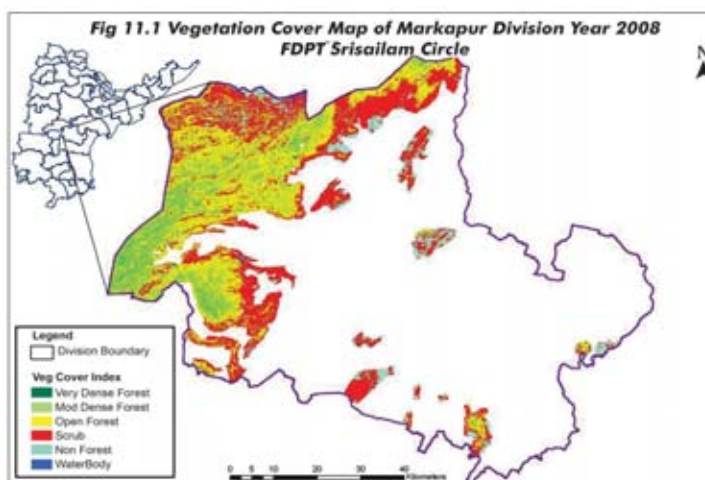


The distribution of Forest Cover in the JFM/CFM areas is as follows-

- The **distribution of Forest Cover** in the JFM/CFM areas is as follows-0.27 Km² in Very Dense Forests, 39.86 Km² in Moderately Dense Forests & 119.14 Km² in Open Forests, 134.22 Km² in Scrub, 53.42 Km² in Non-Forests,

and 0.21 Km² in Water bodies. • **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of data of 2007 (Satellite Imagery of Nov 2007 - Jan 2008), shows that there is a net loss of 21.61 Ha of forest cover between the 2 years. The change matrix, given in **Table II.2**, reveals that there has been a decrease of 0.20 Km² of MDF and 0.02 Km² of OF.

• The simplified forest cover change matrix is given in **Table II.3** and **Table II.4**. • On the basis of ground truthing conducted by the officers of the Geomatics Center and the field



officers, the main reason for decrease in forest cover is due to encroachment and clearance for rising of plantations.

• There are **40 beats** in the division. Negative change in forest cover is seen in only 1 beat, positive change in 2 beats and no change in 37 beats. • Beat wise forest cover in 2008, in different **forest canopy density classes** and **scrub** along with the changes compared to 2007 assessment, is given in **Table II.5**.

Table 11.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	1.93	0.00	0.00	0.00	0.00	0.00	1.93
Moderately Dense Forest	0.00	372.11	0.00	0.00	0.00	0.00	372.11
Open Forest	0.00	0.00	951.39	0.00	0.05	0.00	951.43
Scrub	0.00	0.20	0.07	688.00	0.56	0.00	688.83
Non-Forest	0.00	0.00	0.00	1.11	242.95	0.00	244.06
Water	0.00	0.00	0.00	0.00	0.00	14.50	14.50
Total of 2008	1.93	372.31	951.45	689.11	243.56	14.50	2272.86
Net Change	0.00	0.20	0.02	0.28	-0.50	0.00	

Table 11.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1325.47	0.00	0.00	1325.47
Degraded Forest	0.22	932.67	0.00	932.89
Water	0.00	0.00	14.50	14.50
Total of 2008	1325.69	932.67	14.50	2272.86
Net Change	0.22	-0.22	0.00	

Table 11.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	2014.30	0.00	0.00	2014.30
Barren	0.50	243.56	0.00	244.06
Water	0.00	0.00	14.50	14.50
Total of 2008	2014.80	243.56	14.50	2272.86
Net Change	0.50	-0.50	0.00	

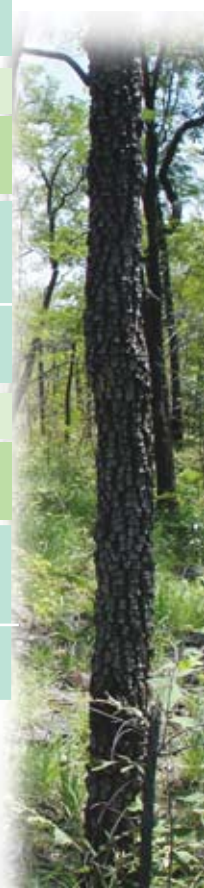


Table 11.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
DORNAL range							
Ch.mantanala	6734.13	68.70	4714.36	1502.76	6285.82	0.00	109.73
Chilakacherla	10197.45	2.29	429.17	3907.89	4339.35	0.00	2009.88
Chinnarutla	5781.90	5.14	2577.36	2560.16	5142.66	0.00	309.78
Chintala	4080.22	3.81	885.63	2544.30	3433.74	0.00	419.00
Edavalli	6679.85	0.00	237.43	1241.55	1478.98	0.00	750.92
Nallaguntla	3995.86	5.67	1578.66	1466.71	3051.04	0.00	312.58
P. Bommalapuram	3634.58	9.02	141.38	812.15	962.55	0.00	669.79
Peddachama	3200.80	2.76	2194.77	828.98	3026.51	0.00	15.98
Peddamantanala	5526.05	5.41	3134.65	1677.61	4817.67	0.00	182.79
Tummalabailu	3034.52	2.39	1526.70	1173.50	2702.59	0.00	169.80
Y.cherlopalli	6826.55	0.48	1241.00	2999.87	4241.35	0.00	769.60
Total	59691.91	105.67	18661.11	20715.48	39482.26	0.00	5719.85
G.V.PALLI range							
Burugundala	13171.23	1.90	1444.49	4906.49	6352.88	0.00	4031.23
G.v.palli	9202.24	11.26	1710.29	5104.05	6825.60	0.00	692.84
Guttalachenu	13801.19	1.72	91.48	4330.61	4423.81	0.00	5633.59
Nekkanti	16658.88	4.57	2165.38	9702.86	11872.81	0.00	2981.70
Palutla	4710.71	3.87	71.07	1572.96	1647.90	0.00	2032.51
Regumanipenta	8882.00	2.53	1367.90	4950.89	6321.32	0.00	1692.15
Total	66426.25	25.85	6850.61	30567.86	37444.32	0.00	17064.02
MARKAPUR range							
Bommilingam	5895.78	32.80	2295.57	1551.82	3880.19	0.00	16.66
Donkaonda	10061.05	0.00	183.37	1605.03	1788.40	0.00	1932.60
Gotlagattu	40324.68	0.74	2.36	225.67	228.77	0.00	2141.80
Gottipadia	26182.95	0.00	74.50	1469.79	1544.29	0.00	4045.25
Gundamcherla	7026.86	3.21	1227.80	3233.67	4464.68	0.00	1499.92
Kalanuthala	56395.90	0.89	472.27	1521.83	1994.99	0.00	2977.25
Kaluzuvvalapadu	40151.76	0.00	6.77	103.14	109.91	0.00	2407.77
Magatur	8094.73	8.36	949.35	2585.90	3543.61	0.00	1545.92
Nagulavaram	8827.83	0.00	13.23	814.92	828.15	0.00	1568.69
Peddarikatla	10439.04	0.00	198.91	1018.19	1217.10	0.00	1209.72
Podili	46818.10	0.00	46.62	822.99	869.61	0.00	828.14
Potlapadu	189589.54	4.85	198.41	723.63	926.89	0.00	2022.68
Total	449808.22	50.85	5669.16	15676.58	21396.59	0.00	22196.40
Y.PALEM range							
Akkapalem	12367.55	0.00	688.60	3035.32	3723.92	-2.39	3212.07
Boyalapalli	31126.22	0.00	6.01	227.41	233.42	0.00	2497.85
Kolukula	16601.39	4.16	1345.88	7169.15	8519.19	17.40	1497.67
Komarolu	11979.18	0.00	430.23	2201.63	2631.86	0.00	2467.37
Mallapalem	7790.17	0.00	7.38	679.36	686.74	0.00	2878.90
Naidupalem	10826.56	0.00	0.00	116.49	116.49	0.00	868.52
Pullalacheruvu	14000.28	0.00	309.48	2839.22	3148.70	6.60	2535.94
Rentapalli	11862.64	0.00	0.00	105.23	105.23	0.00	1937.81
T.r.cheruvu	8495.97	3.70	1755.10	5614.98	7373.78	0.00	689.95
Veerabhadrapuram	9226.37	2.59	1276.87	3401.04	4680.50	0.00	1326.52
Venkatareddypalli	11597.35	0.00	210.33	2793.73	3004.06	0.00	3989.87
Total	145873.69	10.45	6029.88	28183.56	34223.89	21.61	23902.47
Grand total	721800.06	192.82	37210.76	95143.48	132547.06	21.61	68882.74

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

12. Giddalur Division

Guntur Circle

Introduction: Giddalur Forest Division lies in the South Eastern Part of Prakasam District, between latitudes 14° 57' 46" and 16° 09' 48" N and longitudes 78° 44' 16" and 80° 28' 35" E. The Geographical Area of the Division is 10,408.00 Km², which is 59.04% of the total area of the District. The Rivers Gundlakamma, Sagileru, Musi, Paleru and Manneru are seasonal and the Gundlakamma River rises in Nallamala hills and the Cumbum Tank is formed by a bund across the river.

Landuse pattern of the Division is given in **Table 12.1.**

The climate of this Division is dry and salubrious, the **temperatures** ranging from 19°C to 38°C and the annual rainfall is about 871 mm, received mainly from Southwest monsoons.

The rocks in the Division are Sandstone mixed with quartzite and occasional Shale is the characteristic rock formation on the veligonda and at their extreme's bordering Kanigiri, the rocks gradually change into Gneisses or Granite composition. Outcrops of Barytes and Manganese ores also occur in veligonda. The soil types found mainly are red loamy soil, Black cotton, sandy loam and sandy soils.

The total population of the Division is 2.28 million (2001 Census). The Per capita forest area is 0.08 ha. The population density is 219 persons per Km².

Recorded Forest Area: The **total notified forest area** of the Division is 1,948.60 Km², which is 18.72% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 1908.69 Km² (97.95%), 39.91 Km² (2.09%) of the total forest area respectively.

As per Champion and Seth's classification, the forests of Division fall under Southern tropical dry deciduous and it is the predominant and climatic climax forest, Southern Tropical Thorn Forest also occurs in low elevations and in plains.

Protected Area: The Division is one of the two constituent Divisions of Gundla Brahmeswaram (GBM) Wildlife Sanctuary Out of 1948.60 Km² of notified forest area, 444.76 Km² is included in the Gundla Brahmeswaram Wildlife Sanctuary (GBM).

Community Forest Management: There are 110 Vanasamrakshana Samities (VSSs) in the Division. An area of 287.08 Km² forests, which is 19.16 % of the notified forests, is under the management of VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Feb 2009), is 1498.10 Km², which is 14.4 % of the total Geographical area. In terms of the forest canopy cover density classes, the Division has 22.10 Km² of Very Dense Forests, 746.57 Km² of Moderately Dense Forests, and 729.43 Km² of Open Forests. The area of the Scrub is 446.42 Km², Non-Forests 258.38 Km² and

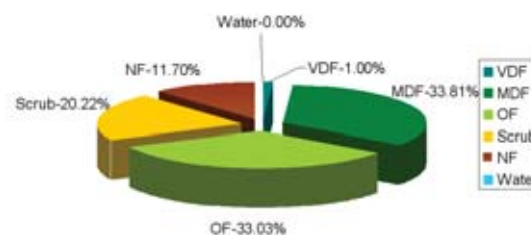
Water Bodies 5.31 Km². The distribution of the forest cover of the division is shown in **Figure 12.1.**

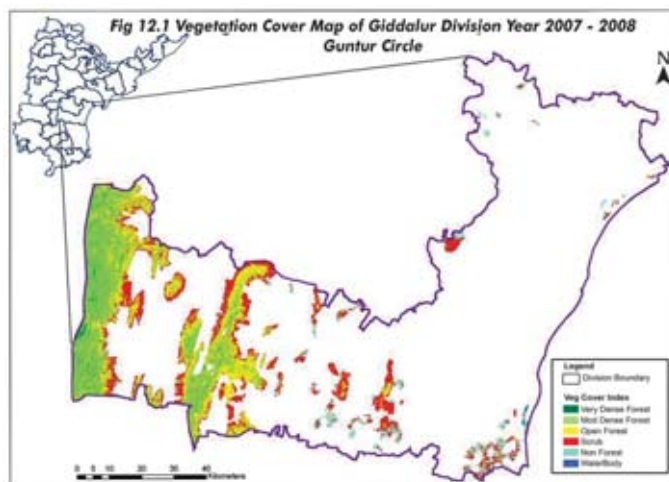
- The **distribution of the Forest Cover** in the JFM/CFM areas is as follows-13.55Km² in Very Dense Forests & 886 Km² in Moderately Dense Forests, 3116.09 Km² in Open Forests, 10064.34 Km² in Scrub, 10817.15 Km² in Non-Forest and 273.7 Km² in Water bodies.

- **Comparison** of the current forest cover (Satellite data of Oct. 2008 - Feb 2009) with that of data of 2007 (Satellite

Table 12.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	10408.00	
Forest including Scrub	1944.51	18.68%
Agriculture	7164.53	68.84%
Land with Scrub	618.70	5.94%
Fallow Lands	100.77	0.97%
Grasslands	22.17	0.21%
Settlements	103.26	0.99%
Vegetation outside Forest	192.62	1.85%
Water bodies	261.44	2.51%





Imagery of Nov 2007 - Jan 2008) shows a net loss of 35.53 Ha of forest cover during the period of one year. • The **forestr cover change matrix**, given in **Table 12.2.** reveals that there has been a decrease of 0.36 Km² of open forest & 1.15 Km² of Scrub forest.

• The simplified forest cover change matrix is given in **Table 12.3.** and **Table 12.4.**

• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in forest cover is due to encroachment.

• There are **62 beats** in the division. Negative change in forest cover is seen in only 1 beat and no

change in 61 beats. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 12.5.**

Table 12.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	22.10	0.00	0.00	0.00	0.00	0.00	22.10
Moderately Dense Forest	0.00	746.57	0.00	0.00	0.00	0.00	746.57
Open Forest	0.00	0.00	729.07	0.00	0.36	0.00	729.43
Scrub	0.00	0.00	0.00	444.75	1.67	0.00	446.42
Non-Forest	0.00	0.00	0.00	0.52	257.86	0.00	258.38
Water	0.00	0.00	0.00	0.00	0.00	5.31	5.31
Total of 2008	22.10	746.57	729.07	445.27	259.88	5.31	2208.20
Net Change	0.00	0.00	-0.36	-1.15	1.50	0.00	

Table 12.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1498.10	0.00	0.00	1498.10
Degraded Forest	0.00	704.80	0.00	704.80
Water	0.00	0.00	5.31	5.31
Total of 2008	1497.74	705.15	5.31	2208.20
Net Change	-0.36	0.36	0.00	

Table 12.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Green	Barren	Water	
Green	1943.01	1.50	0.00	1944.51
Barren	0.00	258.38	0.00	258.38
Water	0.00	0.00	5.31	5.31
Total of 2008	1943.01	259.88	5.31	2208.20
Net Change	-1.50	1.50	0.00	

Table 12.5: Beat wise Forest Cover (Area in Ha)

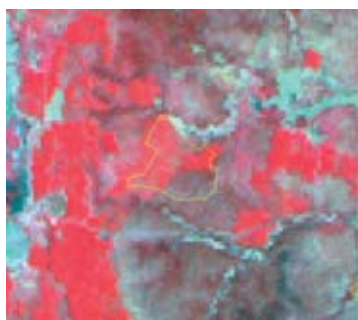
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
GIDDALUR Range							
Allinagaram	6973.16	30.70	1859.56	1329.54	3219.80	0.00	1004.41
Bodi	8099.78	129.31	3197.59	1554.40	4881.30	0.00	955.72
Chinaobenipalli	12784.50	0.00	209.66	1867.77	2077.43	0.00	1649.38
Chintalapalli	5002.54	14.93	1297.71	1738.79	3051.43	0.00	431.18
Gunthapalli	10969.92	0.69	722.08	1414.16	2136.93	0.00	617.15
Janapalacheruvu	10839.83	14.64	1425.84	2126.54	3567.02	0.00	988.25
Nallaguntla	12415.93	19.25	1388.07	1375.28	2782.60	0.00	441.07
Sanjeevarao peta	13518.53	162.19	2993.67	1561.69	4717.55	0.00	785.07
Singasanipalli	8917.16	58.52	2257.57	2529.19	4845.28	0.00	519.99
Taticherla	16978.12	0.00	330.11	1559.93	1890.04	0.00	821.94
Uyyalawada	5278.89	38.49	2067.40	1078.87	3184.76	0.00	442.30
Total	111778.36	468.70	17749.24	18136.16	36354.10	0.00	8656.45
GUNDLAKAMMA Range							
Diguvametta	5066.17	180.35	4635.93	377.62	5193.90	0.00	22.04
Isukagundam	4510.55	48.34	3900.51	703.39	4652.24	0.00	2.20
Kothakota	5325.91	143.14	2920.82	601.23	3665.19	0.00	91.97
Malakondapenta east	6864.09	31.45	5120.63	1875.15	7027.23	0.00	55.04
Malakondapentawest	5911.18	279.96	5504.23	311.53	6095.72	0.00	0.87
Obulesunipenta	4539.50	52.36	3758.12	826.48	4636.96	0.00	36.61
Sandrapodu	8669.28	50.40	2860.38	1548.19	4458.97	0.00	475.50
Tunnel	3875.96	498.59	2916.69	562.75	3978.03	0.00	8.89
Total	44762.65	1284.57	31617.30	6806.33	39708.20	0.00	693.12
KANIGIRI Range							
Ambavaram	2452.19	0.00	133.30	823.17	956.47	0.00	452.94
Ballipalli	13791.76	0.00	0.00	298.24	298.24	0.00	1364.61
Bonthavaripalli	7258.45	56.35	1156.76	2624.61	3837.72	0.00	825.03
Chennapanauunipalli	8925.11	37.50	2606.37	2282.35	4926.22	0.00	307.95
Chundi north	5411.69	0.00	0.00	159.95	159.95	0.00	1726.23
Chundi south	28674.69	0.00	0.00	107.91	107.91	0.00	905.25
Gudipatipalli	16092.21	20.96	1469.17	3143.67	4633.80	0.00	2056.76
Gunthachenampalli	11095.90	5.27	103.27	1786.44	1894.98	-35.53	1119.40
Hazeepuram	22112.07	0.00	0.00	139.58	139.58	0.00	576.72
Kanigiri	30041.10	0.00	8.53	327.23	335.76	0.00	1079.96
Kodigampalli	35559.90	0.00	3.92	30.24	34.16	0.00	720.14
Malapadu	24961.34	0.00	0.00	459.98	459.98	0.00	567.57
Malapadul	8661.37	0.00	580.71	1716.78	2297.49	0.00	343.47
Mogilicherla	4859.22	0.00	0.00	4.29	4.29	0.00	133.57
Nagireddipalli p	24243.76	0.00	14.44	400.69	415.13	0.00	1377.69
Peddacherlopalli	13327.63	0.00	8.82	549.95	558.77	0.00	1222.52
Peddirlapadu	16481.85	0.00	0.81	580.79	581.60	0.00	1959.81
Tadivaripalli	11468.31	0.00	209.29	3113.43	3322.72	0.00	2208.26



Thummagunta	3782.74	0.00	105.01	1160.57	1265.58	0.00	824.43
Thungodu	7107.97	77.51	2077.63	3068.86	5224.00	0.00	206.38
Vedullacheruvup	17803.61	9.30	1362.02	3954.26	5325.58	0.00	1192.18
Total	314112.86	206.88	9840.05	26732.98	36779.91	35.53	21170.88
ONGOLE Range							
Chagollu	2553.52	0.00	0.00	0.00	0.00	0.00	75.42
Chakicherla	2773.52	0.00	5.54	2.10	7.64	0.00	75.29
Chimakurthy	150992.17	0.00	0.00	28.35	28.35	0.00	1399.43
Gudlur	12966.80	0.00	0.00	40.50	40.50	0.00	653.43
Kukatlapalli	165510.05	0.00	0.00	3.51	3.51	0.00	223.65
Kullurpadu	39883.65	0.00	1.01	9.69	10.70	0.00	162.19
Mocherla	10538.99	0.00	4.85	179.61	184.46	0.00	1075.77
Motupalli	40459.63	0.00	2.45	43.54	45.99	0.00	126.29
Peddavaram	6491.95	0.00	0.00	2.61	2.61	0.00	108.67
Perlavanlapalle	35861.49	0.00	0.00	4.57	4.57	0.00	83.55
Potlur	5166.70	0.00	0.00	71.89	71.89	0.00	1205.43
Pullaripalem	15918.82	0.00	0.00	10.04	10.04	0.00	89.99
Total	489117.29	0.00	13.86	396.40	410.26	0.00	5279.09
TURIMELLA Range							
Ambavaram	2452.19	11.55	1506.42	1937.57	3455.54	0.00	956.68
Araveetikota	10512.36	51.88	2509.69	3104.80	5666.37	0.00	509.80
Bollupalli	6375.39	6.54	1870.26	2570.12	4446.92	0.00	682.43
J.b. Krishnapuram	13830.70	0.00	257.83	2054.60	2312.43	0.00	1505.42
J.p.cheruvu	6602.16	3.58	1081.24	1532.89	2617.71	0.00	1350.45
Maddipenta	5111.02	150.17	3983.94	1075.63	5209.74	0.00	49.23
Papinenipalli	9902.40	11.09	1959.20	3577.52	5547.81	0.00	1243.39
Racherla	11809.32	0.00	108.07	1379.34	1487.41	0.00	1688.23
Turimella	7761.57	6.54	623.25	1680.23	2310.02	0.00	540.37
Velagalapaya	6671.74	8.74	1536.35	1958.27	3503.36	0.00	316.02
Total	81028.85	250.08	15436.24	20870.96	36557.28	0.00	8842.01
Grand total	1040800.00	2210.23	74656.69	72942.83	149809.75	35.53	44641.55

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.18901
Latitude	15.17788
Area_Ha	20.136
Class	Open to NF
Comp_No	467
Beat	Gunthachenampalli
Range	Kanigiri
Division	Giddalur

13. Guntur Division

Introduction: **Guntur Forest Division** Comprises of the entire District and lies in the South Eastern Part of Prakasam District, between latitudes 15° 42' 13.68" and 16° 49' 23.52" N and longitudes 79° 12' 34.56" and 80° 54' 16.92" E. The Geographical Area of the Division is 11,391.00 Km², which constitutes 100 % of the total area of the District. The Division has four physiographic zones the sea board, the plains, and hills rising gently to an altitude of 500 m. The 'U' shaped Nallamala hills skirting Macherla to its west and on the east Markapur and Kurnool Divisions, the other hill ranges are Venkatayyapalem and Kondaveedu of Sttenapalli and Narasaraopet and in the North from Nagarjunasagar runs towards east along Krishna River and meets in Bay of Bengal. The important rivers draning the division is the Krishna River and Gundlakamma with tributaries which are seasonal are Chandravanka, Goli and Naguleru in Macherla. **Landuse pattern of the Division** is given in **Table 13.1**.

The climate of this Division is dry and salubrious temperatures ranging from 17°C to 48°C, and the annual rainfall is about 989.1 mm received from both South-West and North-East monsoons.

The Common rocks are Shales, Slates, Lime-stone, Quartzite, Gneisses and Schist. Soils of all kinds occur in the Division, Swampy in the Krishna estuary, Sandy along the coast, Alluvial on the banks of Krishna, Red Gravelly in the interior and Loamy of rather rare occurrence.

The Guntur Division and District Population is 4.40 million (2001 Census). The Per capita forest area is 0.04 ha. The population density is 387 persons per Km². The livestock population is 2.3 million.

Table 13.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	11391.00	
Forest including Scrub	1420.49	12.47
Agriculture	8476.51	74.41
Land with Scrub	160.46	1.41
Fallow Lands	593.40	5.21
Grasslands	0.71	0.01
Settlements	283.44	2.49
Vegetation outside Forest	102.91	0.90
Water bodies	353.08	3.10

Recorded Forest Area: The total notified forest area of the Division is 1619.410 Km², which is 14.21 % of the total geographical area. The total forest area is Reserved Forest.

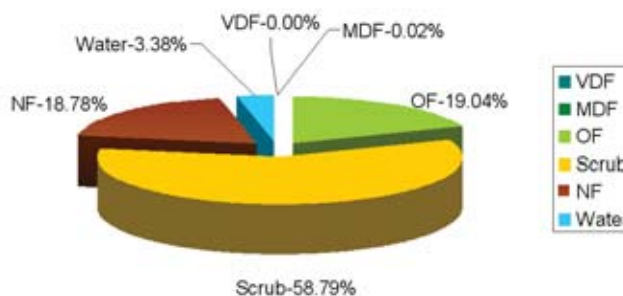
As per Champion and Seth's classification, the major Forest types of Division are classified into coastal Forests and inland Forests. In Coastal Forests Mangroves Forests and Dry evergreen Forests are present. Inland Forests are Southern dry mixed deciduous, Hardwickia binata forests and Acacia arabica forests.

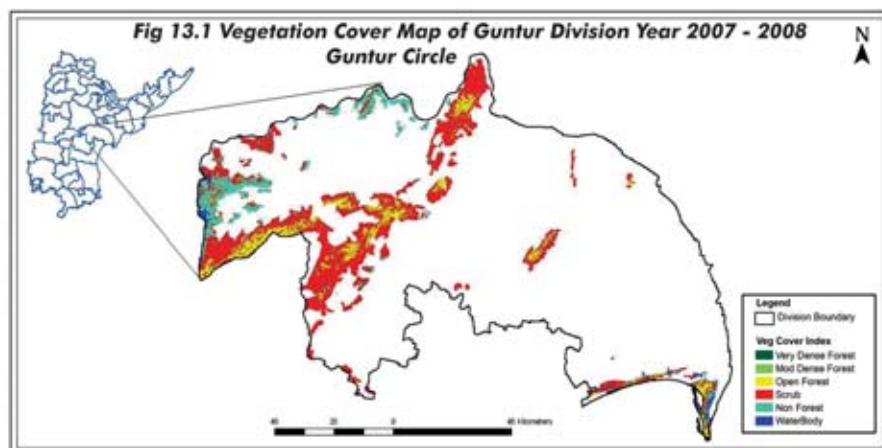
Protected Area: The Division is one of the two constituent Divisions of Krishna Wildlife Sanctuary (KWS). Out of 1619.410 Km² of notified forest area, 81.99 Km² is included in the Krishna Wildlife Sanctuary (KWS).

Community Forest Management: There are 180 **Vana Samrakshana Samities** (VSSs) in the Division. An area of 260.80 Km² forests, which is constitutes 16.10 % of the notified forests, is under the management of the VSSs.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Feb 2009), is 347.70 Km², which is 3.05% of the total Geographical area. In terms of the forest canopy Cover density classes, 0.29 Km² of Moderately Dense Forests, and 347.41 Km² of Open Forests. The area of the Scrub is 1072.79 Km², Non-Forest 342.63 Km² and Water Bodies 61.68 Km². The distribution of the forest cover of the division is shown in **Figure 13.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows- 5.46Km² in Moderately Dense Forests, 25.04 Km² in Open Forests, 199.88 Km²





in Scrub, 33.88 Km² in Non-Forest, and 1.99 Km² in Water bodies.

- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Feb 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008) shows no loss in forest cover.

- The **change matrix**, given in **Table 13.2** reveals that there is no change in forest cover.

- The **simplified forest cover change matrix** is given in **Table 13.3** and **Table 13.4**.
- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 13.5**.

Table 13.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	0.29	0.00	0.00	0.00	0.00	0.29
Open Forest	0.00	0.00	347.41	0.00	0.00	0.00	347.41
Scrub	0.00	0.00	0.00	1072.79	0.00	0.00	1072.79
Non-Forest	0.00	0.00	0.00	0.00	342.63	0.00	342.63
Water	0.00	0.00	0.00	0.00	0.00	61.68	61.68
Total of 2008	0.00	0.29	347.41	1072.79	342.63	61.68	1824.80
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 13.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

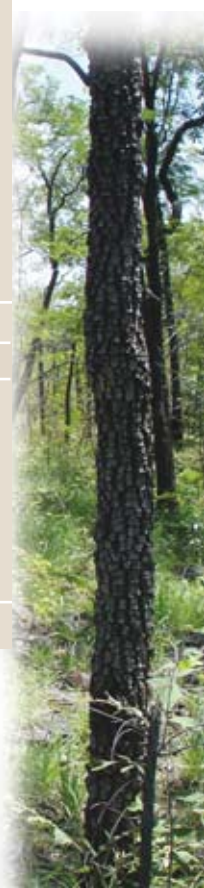
2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	347.70	0.00	0.00	347.70
Degraded Forest	0.00	1415.42	0.00	1415.42
Water	0.00	0.00	61.68	61.68
Total of 2008	347.70	1415.42	61.68	1824.80
Net Change	0.00	0.00	0.00	

Table 13.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Green	Barren	Water	
Green	1420.49	0.00	0.00	1420.49
Barren	0.00	342.63	0.00	342.63
Water	0.00	0.00	61.68	61.68
Total of 2008	1420.49	342.63	61.68	1824.80
Net Change	0.00	0.00	0.00	

Table 13.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
GUNTUR Range							
Ameenabad	26504.86	0.00	0.00	365.08	365.08	0.00	907.15
Atchampet	25458.44	0.00	0.00	525.66	525.66	0.00	2,201.19
Bodanam	5407.75	0.00	0.00	116.96	116.96	0.00	1,118.12
Chinthapalli	4596.98	0.00	0.00	1,057.06	1,057.06	0.00	1,848.52
Dodleru	48714.27	0.00	0.00	9.66	9.66	0.00	660.03
Enamdala	57574.26	0.00	0.00	1,058.58	1,058.58	0.00	1,816.63
Endroy	44849.36	0.00	0.00	24.25	24.25	0.00	799.05
Gundlapalli	8472.38	0.00	0.00	730.13	730.13	0.00	2,068.72
Guthikonda	39538.55	0.00	0.00	1,585.49	1,585.49	0.00	2,392.60
Konanki	15359.19	0.00	0.00	116.30	116.30	0.00	2,488.40
Kondaveedu	44882.38	0.00	0.00	458.73	458.73	0.00	715.42
Madinapadu	9712.60	0.00	0.00	10.04	10.04	0.00	1,250.63
Mangalagiri	59422.52	0.00	0.00	192.14	192.14	0.00	458.23
Nekarikal	4121.48	0.00	0.00	559.94	559.94	0.00	1,819.37
Papayapalem	4799.84	0.00	0.00	268.53	268.53	0.00	2,639.20
Pulichintha	6185.36	0.00	0.00	1,424.15	1,424.15	0.00	2,064.97
Tripurapuram	34611.12	0.00	0.00	1,164.60	1,164.60	0.00	2,792.61
Tsallagariga	8338.01	0.00	0.00	5.32	5.32	0.00	4,843.76
Vemavaram	26584.94	0.00	0.00	9.05	9.05	0.00	273.12
Venkatayapalem	2680.19	0.00	0.58	780.38	780.96	0.00	1,306.44
Total	477814.48	0.00	0.58	10462.05	10,462.63	0.00	34464.16
MACHERLA Range							
Adigoppula	7854.09	0.00	0.00	1,405.21	1,405.21	0.00	1,657.01
Daida	22971.94	0.00	0.00	0.00	0.00	0.00	429.66
Kakirala	5606.04	0.00	0.00	757.42	757.42	0.00	1,250.68
Loyapalli	7767.90	0.00	0.00	3,128.37	3,128.37	0.00	1,584.79
Macherla	15994.31	0.00	0.00	12.51	12.51	0.00	1,310.95
Madugula	23119.50	0.00	0.00	0.00	0.00	0.00	223.43
Minchalapadu	5759.89	0.00	0.00	1,638.50	1,638.50	0.00	1,688.49
Mutukuru	9515.48	0.00	0.00	2,142.67	2,142.67	0.00	2,474.82
Veldurthi	17351.71	0.00	0.00	30.57	30.57	0.00	631.00
Total	115940.87	0.00	0.00	9115.25	9,115.25	0.00	11250.83
REPALLE Range							
Adavuladeevi	106345.62	0.00	0.00	3.83	3.83	0.00	476.69
Dindi	2861.42	0.00	0.00	19.60	19.60	0.00	226.42
Muthayapalem a	19258.97	0.00	3.55	147.67	151.22	0.00	566.59
Muthayapalem b	47933.86	0.00	0.00	56.14	56.14	0.00	1,576.10
Nizampatnam	50377.60	0.00	0.00	284.47	284.47	0.00	341.36
Puluguvaripalem	8331.27	0.00	0.00	344.35	344.35	0.00	680.46
Total	235108.74	0.00	3.55	856.06	859.61	0.00	3867.62



VINUKONDA Range							
Bollapalli	5837.16	0.00	0.00	718.19	718.19	0.00	2,958.12
Chejerla	25790.73	0.00	0.00	922.58	922.58	0.00	1,770.63
Domalagudem	9555.82	0.00	0.00	293.47	293.47	0.00	2,629.27
Epuru east	14284.95	0.00	0.00	3.90	3.90	0.00	1,313.60
Epuru west	4435.87	0.00	0.00	625.57	625.57	0.00	2,101.87
Garikapadu	4031.41	0.00	0.00	434.37	434.37	0.00	1,608.72
Jayanthipuram	2895.77	0.00	0.00	935.22	935.22	0.00	1,157.22
Kandrika	6685.14	0.00	0.00	617.99	617.99	0.00	3,411.45
Kanumulachervu	11781.85	0.00	0.78	184.64	185.42	0.00	4,968.49
Karempudi	8496.57	0.00	0.00	815.17	815.17	0.00	1,976.62
Mellavagu	2492.46	0.00	0.00	882.29	882.29	0.00	1,191.42
Naidupalem	4912.95	0.00	0.00	172.20	172.20	0.00	2,678.10
Ravulapuram	3538.90	0.00	0.00	449.31	449.31	0.00	2,380.86
Ravvaram	50819.65	0.00	3.57	17.48	21.05	0.00	1,584.86
Remidicherla	4431.22	0.00	0.00	1,660.31	1,660.31	0.00	1,790.92
Tangedumalli	35294.48	0.00	0.00	0.69	0.69	0.00	607.82
Tangirala	12881.47	0.00	0.00	4.22	4.22	0.00	1,393.58
Vaddemgunta	23653.10	0.00	0.00	0.39	0.39	0.00	2,106.20
Total	231819.50	0.00	4.35	8737.99	8,742.34	0.00	37629.75
WL-KRISHNA Range							
Kothapalem(wl)	1192.01	0.00	0.00	475.03	475.03	0.00	371.92
Lanka vanidibba(wl)	4053.51	0.05	0.00	901.36	901.41	0.00	537.34
Mollagunta(wl)	9575.86	0.00	0.00	1,042.24	1,042.24	0.00	960.45
Total	14821.39	0.05	0.00	2418.63	2,418.68	0.00	1869.71
Wl-nsagar range							
Gangalgunta(wl)	6176.73	0.00	8.82	1,218.58	1,227.40	0.00	3,333.22
Gottipalli(wl)	5596.18	0.00	0.00	71.76	71.76	0.00	683.73
Kandlgunta(wl)	3019.82	0.00	0.00	15.26	15.26	0.00	248.16
Koppunuru(wl)	8289.14	0.00	0.00	43.55	43.55	0.00	3,059.23
Nagulavaram(wl)	6976.55	0.00	0.00	13.67	13.67	0.00	814.45
Pasuvemula(wl)	9816.78	0.00	0.00	45.29	45.29	0.00	2,216.62
Sirigiripadu(wl)	8364.64	0.00	11.41	1,721.82	1,733.23	0.00	5,270.65
Tummurukota(wl)	12076.82	0.00	0.00	18.37	18.37	0.00	2,373.82
Zuvuku(wl)	3278.38	0.00	0.00	2.00	2.00	0.00	195.03
Total	63595.04	0.00	20.23	3150.30	3,170.53	0.00	18194.91
Grand total	1139100.00	0.05	28.71	34740.28	34,769.04	0.00	107276.98

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



14. Nellore Division

Guntur Circle

Introduction: Nellore Forest Division, Comprises of the entire District and lies in the South Eastern Part of Andhra Pradesh, between latitudes 15° 4' 58.59" and 13° 48' 49.58" N and longitudes 79° 6' 4.36" and 80° 14' 46.71" E. The Geographical Area of the Division is 12934.72 Km², which is 100 % of the total area of the District. The Division is bordered by the Bay of Bengal to the east, the state of Tamil Nadu to the South, the district of Kadapa, and the district of Prakasam to the north. The eastern side consists of area of low lying land extending from the base of the Eastern Ghats to the sea. The west side of the district is separated from Kadapa district by Veligonda hills. The district is split by the River Pennar and is located on both south and north banks of it. This Division has four physiographic zones the sea board, the plains, foothills and Ghats reaching upto 800 m, The principal rivers in the district area Pennar in the centre, Kandaleru, Swarnamukhi, Kalinga Rivers in the south and Uppuvagu in the north. **Land use pattern** of the Division is given in **Table 14.1.**

The climate of this Division has a hot and exhausting for most part of the year, the temperature ranging from 180 to 420 and the annual rainfall ranges from 700-1040 mm through South West and North East Monsoons.

The Division is under laid by two types of the oldest rocks, Schistose and Quartzite's of the Dharwar System. The Peninsular gneisses, Closepet granite and Pegmatite are also found intruding into the Schistose series, the north-west portion of the Dharwarian belt of Nellore devoid of Pegmatite intrusions but the southern Eastern portion, Gudur, Rapur areas is traversed by many intrusions and they contain Deposits of Muscovite mica.

The soil types found mainly are Sandy soils, Red soils Lateritic soils, Murram, Clayey and Alluvial soils. The Division & District Population is 2.65 million (2001 Census). The Per capita forest area is 0.8 ha. The population density is 203 persons per Km². The livestock population is 2.5 million.

Recorded Forest Area: The Nellore District it self comprises the Division is one of the 3 constituent Divisions of Guntur Circle. Out of 2519.37Km² of notified forest area, 1030 Km² is included in the Peninsula Narasimha WLS, 500 Km² is included in Pulicat Bird Sanctuary, 4.58 Km² is included in Nelapattu Bird Sanctuary.

Community Forest Management: There are 292 **Forest Protection Committees (FPCs)** or Vana Samrakshana Samities (VSSs) in the Division. An area of 645.93 Km² forests, which is 25.63 % of the notified forests, is under the management of the VSSs.

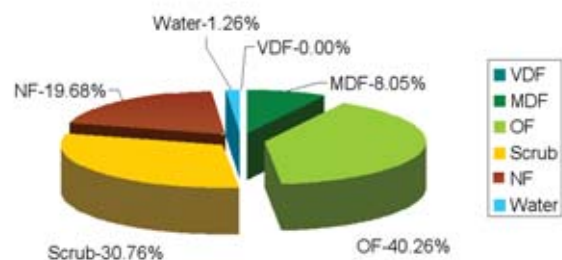
Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Feb 2009) is 1149.61 Km², which is 8.8% of the total Geographical area. In terms of the forest cover canopy density classes the Division has 191.55 Km² of Moderately Dense Forests, and 958.06 Km² of Open Forests. The area of the Scrub is 732.09 Km², Non-Forest 468.31 Km² and Water Bodies 29.95 Km². • The distribution of the forest cover of the division is shown in **Figure 14.1.**

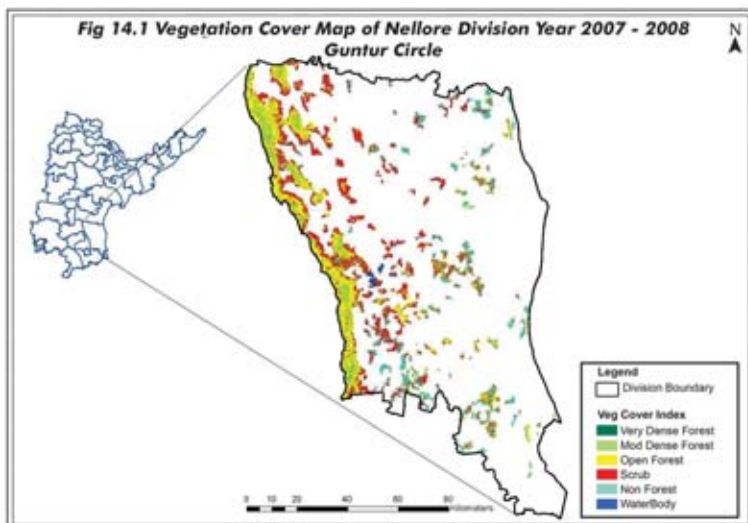
• The **distribution of Forest Cover** in the JFM/CFM areas is as follows-6.43 Km² in Moderately Dense Forests & 115.56 Km² in Open Forests, 264.66 Km² in Scrub, 207.8 Km² in Non-Forest, and 1.33 Km² in Water bodies.

• **Comparison** of the current forest cover (Satellite data of Oct 2008 - Feb 2009) with that of data of 2007 (Satellite

Table 14.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	12934.72	
Forest including Scrub	1879.83	14.53
Agriculture	6610.72	51.11
Land with Scrub	2126.77	16.44
Fallow Lands	621.88	4.81
Grasslands	21.02	0.16
Settlements	84.33	0.65
Vegetation outside Forest	141.98	1.10
Water bodies	1448.19	11.20





Imagery of Nov 2007- Jan 2008) shows a Net loss of 64.47 Ha of forest cover during the period of one year.

- The forest cover change matrix, given in Table 14.2 reveals that there has been a decrease of 0.65 Km² Open Forests.
 - The simplified forest cover change matrix is given in Table 14.3 and Table 14.4.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to clearance for raising of plantations.
- There are **85 Beats** in the division. There

are no changes in Forest Cover in 78 beats. There is Negative change in 5 Beats and Positive Change in 2 Beat.

- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in Table 14.5.

Table 14.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	191.55	0.00	0.00	0.00	0.00	191.55
Open Forest	0.00	0.00	957.09	0.22	0.75	0.00	958.06
Scrub	0.00	0.00	0.15	731.94	0.00	0.00	732.09
Non-Forest	0.00	0.00	0.17	0.00	468.14	0.00	468.31
Water	0.00	0.00	0.00	0.00	0.00	29.95	29.95
Total of 2008	0.00	191.55	957.41	732.16	468.89	29.95	2379.96
Net Change	0.00	0.00	-0.65	0.07	0.58	0.00	0.00

Table 14.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

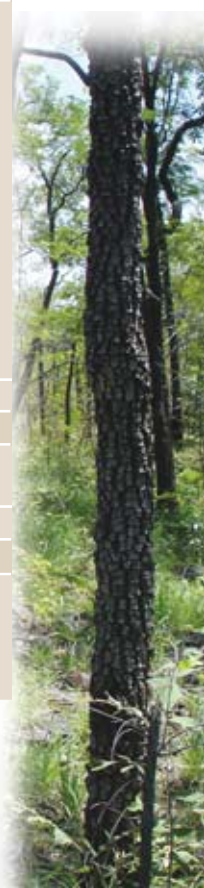
2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1148.96	0.65	0.00	1149.61
Degraded Forest	0.00	1200.40	0.00	1200.40
Water	0.00	0.00	29.95	29.95
Total of 2008	1148.96	1201.05	29.95	2379.96
Net Change	-0.65	0.65	0.00	

Table 14.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Green	Barren	Water	
Green	1881.12	0.58	0.00	1881.70
Barren	0.00	468.31	0.00	468.31
Water	0.00	0.00	29.95	29.95
Total of 2008	1881.12	468.89	29.95	2379.96
Net Change	-0.58	0.58	0.00	

Table 14.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ATMAKUR Range							
Bata	4823.61	0.00	792.99	2,162.81	2,955.80	0.00	878.55
Bommavaram	6397.92	0.00	70.89	868.64	939.53	0.00	112.28
Brahmanapalli	4791.36	0.00	434.67	1,171.82	1,606.49	0.00	541.24
Gowravaram	14884.82	0.00	211.25	1,950.84	2,162.09	-37.67	1,196.21
Gudigunta	8636.13	0.00	971.60	3,432.03	4,403.63	0.00	1,373.24
Gudipadu	17507.74	0.00	1.62	176.20	177.82	0.00	618.19
K.n. Palli n	3006.15	0.00	241.12	1,967.67	2,208.79	0.00	406.26
Kampasamudram	2435.14	0.00	0.00	23.68	23.68	0.00	519.95
Ponguru	36418.34	0.00	0.34	783.29	783.63	0.00	3,062.49
Rajavolu	21791.64	0.00	0.58	102.90	103.48	0.00	1,248.47
Rajupalem-atma	10624.23	0.00	393.36	1,509.52	1,902.88	0.00	390.40
Sangam	64585.54	0.00	79.95	432.68	512.63	0.00	1,501.62
Singanapalli	4069.76	0.00	209.55	1,440.50	1,650.05	0.00	1,141.55
T. Talupur	4818.31	0.00	104.34	2,087.69	2,192.03	0.00	1,219.53
Venkatapuram	5386.85	0.00	1,094.40	1,918.15	3,012.55	0.00	689.93
Total	210177.53	0.00	4606.66	20028.42	24635.08	-37.67	14899.91
KAVALI Range							
Bitragunta	20513.47	0.00	2.37	57.27	59.64	0.00	204.05
Chinnannaluru	43878.82	0.00	3.97	57.09	61.06	0.00	767.47
Dagadarthi	34680.09	0.00	211.96	735.54	947.50	0.00	763.19
Gollapalem	15364.28	0.00	12.94	576.41	589.35	0.00	253.39
Kavali	6192.51	1.10	10.46	141.02	152.58	0.00	415.79
Kesawaram	28796.05	0.00	0.00	14.11	14.11	0.00	873.08
Kothapalli	13416.82	0.00	12.09	91.84	103.93	0.00	679.60
Racherlapadu	48988.87	0.00	16.94	267.08	284.02	0.00	281.31
Total	211830.92	1.10	270.73	1940.36	2212.19	0.00	4237.88
NELLORE Range							
Dontali	5993.76	0.00	0.00	224.25	224.25	0.00	377.96
Gudur	55820.24	0.58	33.21	1,192.48	1,226.27	0.00	826.83
I puru	4452.24	0.00	0.00	31.29	31.29	0.00	63.84
Kadivedu	38962.05	0.81	10.23	887.99	899.03	0.00	367.54
Kondlapudi	62819.74	0.00	3.98	269.33	273.31	0.00	444.01
Kothapatnam	4501.32	0.00	0.74	99.77	100.51	0.00	100.21
Marupur	6835.18	0.00	26.93	801.48	828.41	0.00	740.16
Tammenapatnam	2899.86	0.00	0.00	26.83	26.83	0.00	24.21
Teegapalem	1128.69	0.00	0.00	70.47	70.47	0.00	45.22
Vadlapudi	14137.21	0.00	28.56	906.15	934.71	0.00	1,326.81
Varagali	13949.43	0.00	0.98	53.06	54.04	0.00	71.14
Venkatachalam	32394.51	0.58	23.57	784.81	808.96	0.00	899.41
Total	243894.25	1.97	128.20	5347.91	5478.08	0.00	5287.34
PULICAT BIRD SANCTUARY Range							
Pernadu	16661.39	0.00	19.31	686.25	705.56	0.00	91.48
Venadu	34151.55	0.00	0.70	76.34	77.04	0.00	45.31
Total	50812.93	0.00	20.01	762.59	782.60	0.00	136.79
RAPUR Range							
Adurpalli	19965.45	0.00	0.00	43.04	43.04	0.00	1,052.06
Ammavaripalem	26792.14	0.00	12.39	202.14	214.53	0.00	1,090.65
Chipini	6581.47	0.00	412.21	1,767.47	2,179.68	0.00	791.46



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Epuru	3765.39	0.00	372.40	1,583.51	1,955.91	0.00	440.95
Gonupalli	8886.32	0.00	517.89	4,826.74	5,344.63	-1.86	1,648.89
Kaluvoya	11282.40	0.00	273.17	1,583.49	1,856.66	0.00	949.74
Koturupalli	4658.34	0.00	105.07	1,761.84	1,866.91	0.00	887.05
Penubarthi	13568.05	0.00	35.32	707.85	743.17	8.82	1,525.08
Pulikollu	6188.57	0.00	0.00	65.05	65.05	0.00	588.08
Rajupalem-rapur	5017.25	0.00	133.07	1,834.77	1,967.84	0.00	1,331.37
Rapur	5909.52	0.00	858.14	2,442.63	3,300.77	0.00	521.55
Tagecherla	4116.17	0.00	51.03	1,635.50	1,686.53	0.00	572.70
Thumaya	7411.28	0.00	1.40	429.28	430.68	0.00	1,120.79
Turpukambampadu	10874.57	0.00	0.00	240.73	240.73	0.00	1,349.32
Valasa	4812.15	0.00	783.10	2,241.99	3,025.09	0.00	433.50
Vavintaparthi	10138.91	0.00	1.79	510.15	511.94	0.00	1,322.09
Total	149968.01	0.00	3556.98	21876.18	25433.16	6.96	15625.28
UDAYAGIRI Range							
Arlapadia	27203.16	0.00	712.37	3,885.39	4,597.76	0.00	3,370.06
Chinnanagampalle	6269.51	0.00	136.56	1,114.80	1,251.36	0.00	637.85
Devammacheruvu	9349.89	0.00	2,040.54	5,394.27	7,434.81	0.00	406.20
Duttalur	38463.54	0.00	5.42	776.02	781.44	0.00	2,660.14
Kottapalli	6365.26	0.00	572.00	3,100.79	3,672.79	0.00	1,107.01
Nandipadu	12995.09	0.00	45.66	967.12	1,012.78	-12.68	1,959.52
Pandrangi	6616.45	0.00	738.37	3,166.44	3,904.81	0.00	925.91
Sekunalapalli	6392.97	0.00	51.87	2,008.15	2,060.02	-11.07	1,264.40
Sitatampuram	6246.75	0.00	708.04	1,496.54	2,204.58	8.44	92.81
Udayagiri east	6796.40	0.00	84.92	1,751.03	1,835.95	-18.45	520.28
Udayagiri west	4725.74	0.00	662.16	1,617.11	2,279.27	0.00	289.61
Varikuntapadu	42039.38	0.00	2.44	528.21	530.65	0.00	2,113.98
Total	173464.15	0.00	5760.35	25805.87	31566.22	-33.76	15347.77
VENKATAGIRI Range							
Alturpad	12869.81	0.00	1,096.99	3,813.09	4,910.08	0.00	976.09
Attiwaram	18364.87	0.00	80.87	184.56	265.43	0.00	557.26
Balayapalli	21782.44	0.00	4.04	94.75	98.79	0.00	1,484.18
Chaganam	16541.60	0.00	22.64	2,037.53	2,060.17	0.00	2,406.80
Chilamanur	6538.03	0.02	79.16	266.09	345.27	0.00	515.94
Chilamuru	31071.00	0.00	109.73	1,691.76	1,801.49	0.00	1,085.14
Dachuru	3395.40	0.00	416.50	905.21	1,321.71	0.00	504.82
Dakkili	5514.53	0.00	0.00	98.50	98.50	0.00	1,204.86
Davulapalli	8212.18	0.00	805.79	2,628.62	3,434.41	0.00	387.49
Doravari satram	22148.71	0.00	16.88	583.80	600.68	0.00	688.28
Gilakapadu	8846.50	0.00	75.41	1,370.21	1,445.62	0.00	964.44
Jayampu	13037.62	0.00	138.80	525.32	664.12	0.00	852.43
Jorepalli	5862.53	0.00	0.00	207.06	207.06	0.00	1,583.90
Kurjagunta	6493.15	0.00	260.53	999.29	1,259.82	0.00	1,473.29
Marlapudi	21792.03	0.00	0.00	57.99	57.99	0.00	14.61
Naidupeta	5865.07	0.00	0.37	198.27	198.64	0.00	322.93
Palem kota	4344.12	0.00	913.58	1,442.83	2,356.41	0.00	604.09
Sullurupet	20062.31	0.00	0.00	0.00	0.00	0.00	0.21
Teelthampadu	4546.77	0.00	581.52	808.94	1,390.46	0.00	261.84
Uggumudi	17829.73	0.00	32.19	623.88	656.07	0.00	644.26
Vembulur	4884.01	0.00	163.01	1,351.40	1,514.41	0.00	486.93
Yatalur	7449.81	0.03	14.01	155.76	169.80	0.00	654.41
Total	267452.22	0.05	4812.02	20044.86	24856.93	0.00	17674.20
Grand total	1307600.00	3.12	19154.95	95806.19	114964.26	-64.47	73209.17

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

15. Hyderabad Division Hyderabad Circle

Introduction: Hyderabad Forest Division consists of Hyderabad & Rangareddy Districts. Hyderabad forest division lies between latitudes 16° 50' 39" to 17° 42' 28" in the North & Longitudes 77° 21' 49" to 78° 49' 49" in the East. The Geographical Area of the Division is 7,710 Km². The average altitude is 536 m above MSL. The highest point in the city is Banjara Hills, which is 665 m above MSL. The contour level falls gradually from west to east creating almost a trough near the Musi River which runs through the city.

The climate of this Division is generally dry with temperatures ranging from 12° C to 42°C and the normal rain fall of the Dist. Is 786.8 mm, received mainly from Southwest monsoons.

Granites are found in the Division. The soil types found mainly are Black cotton, Red and Brown sandy loam.

The total population of the Division and District is 7.4 millions (2001 Census), which constitutes about 9.71 % of the total population of the AP. The Per capita forest area is 0.01 ha. The population density is 960 persons per Km². The livestock population is 1.6 million.

Recorded Forest Area: The total notified forest area of the Division is 730.75 Km², which is 9.48% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 379.96 Km² (52%), 244.70 Km² (33.49%) and 106.09 Km² (14.52%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous and Tropical Thorn Forest types.

Protected Area: No protected areas are found in this Division.

Community Forest Management: There are 123 Forest Protection Committees (FPCs) or Vana Samrakshana Samities (VSSs) in the Division. An area of 353.49 Km² forests which is 48.37 % of the notified forests is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008) is 338.18 Km², which is 4.39% of the total Geographical area. In terms of the forest canopy density classes, the Division has 122.10 Km² of Moderately Dense Forest, and 216.08 Km² of Open Forest. The area of the Scrub is 389.48 Km², Non-Forest 28.46 Km² and Water Bodies 2.75 Km². The distribution of the forest cover of the division is shown in **Figure 15.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows - 53.83 Km² in Moderately Dense Forests, 95.68 Km² in Open Forests. The area of Scrub is 134.87 Km², 6.69 Km² is Non-Forest and 0.85 Km² is Water bodies.

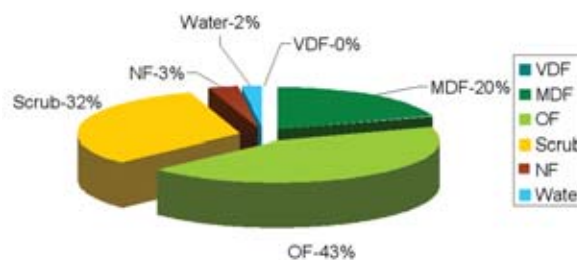
- **Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008), shows a net loss of 137.68 Ha of forest cover during the period of one year.

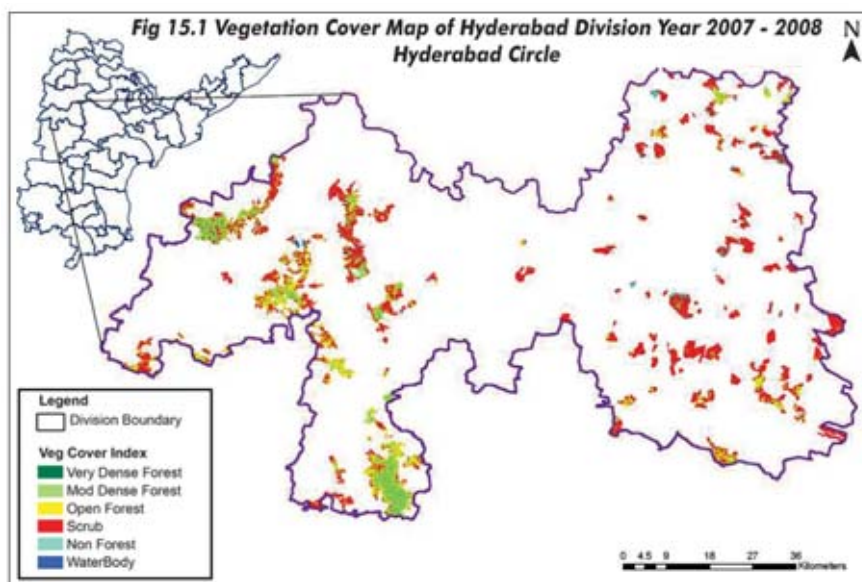
- The **change matrix**, given in **Table 15.2** reveals that there has been a decrease of 0.13 Km² of moderately dense forest and 1.25 Km² of open forest.

- The **simplified forest cover change matrix** is given in **Table 15.3** and **15.4**.

Table 15.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	7710	
Forest including Scrub	730.75	9.48
Agriculture	5916.47	76.77
Land with Scrub	435.56	5.64
Fallow Lands	14.15	0.18
Grasslands	0.79	0.01
Settlements	424.91	5.50
Not available for cultivation	27.36	0.35
Rivers/Streams/Tanks	160.01	2.07





• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations. • There are **62 beats** in the division. Negative change in forest cover is seen in only 6 beats, positive change in 4 beats and no change in 52 beats. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 15.5**.

Table 15.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	122.08	0.15	0.00	0.00	0.00	122.23
Open Forest	0.00	0.02	215.7	1.38	0.23	0.00	217.33
Scrub	0.00	0.00	0.23	386.57	1.94	0.00	388.74
Non-Forest	0.00	0.00	0.00	1.53	26.29	0.00	27.82
Water	0.00	0.00	0.00	0.00	0.00	2.75	2.75
Total of 2008	0.00	122.10	216.08	389.48	28.46	2.75	758.87
Net Change	0.00	-0.13	-1.25	0.74	0.64	0.00	0.00

Table 15.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	338.18	1.38	0	339.56
Degraded Forest	0	416.56	0	416.56
Water	0	0	2.75	2.75
Total of 2008	338.18	417.94	2.75	758.87
Net Change	-1.38	1.38	0	

Table 15.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	726.13	2.17	0	728.30
Barren	1.53	26.29	0	27.82
Water	0	0	2.75	2.75
Total of 2008	727.66	28.46	2.75	758.87
Net Change	-0.64	0.64	0	

Table 15.5: Beat wise Forest Cover (Area in Ha)

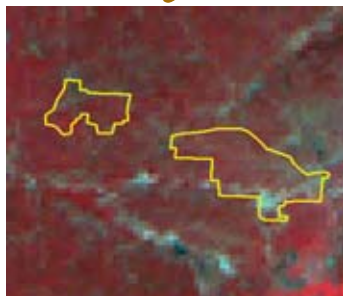
Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
HYDERABAD(N) Range						
Amberpet	15969.59	21.58	78.63	100.21	0.00	1788.21
Ganganpahad	22673.93	0	3.97	3.97	0.00	402.45
Keesra	31923.24	49.46	164.76	214.22	-47.28	1308.37
Kothrepally	11127.13	0	0	0	0.00	0.04
Laxmapur	3536.13	125.03	149.93	274.96	10.68	361.38
Medchal	8655.74	0.61	28.31	28.92	0.00	574.16
Medpally	18862.42	0.56	28.44	29	0.00	773.64
Mudmiyal	115703	9.71	113.18	122.89	-7.37	1216.92
Pochampally	11375.61	22.26	337.15	359.41	0.00	650.45
Shamirpet	6933	5.21	146.37	151.58	0.00	664.49
Suraram	14894.1	0	22.42	22.42	0.00	488.07
Turkapally	12828.99	320.28	498.62	818.9	-10.31	838.75
Total	274483	554.69	1571.77	2126.46	-54.28	9066.91
HYDERABAD(S) Range						
Dardumailaram	13761.8	34.14	240.72	274.86	0.40	1500.54
Gollur	6844.67	22.43	115.02	137.45	0.00	573.53
Gungal	11777.1	55.33	451.85	507.18	0.00	798.47
Ibrahimpattam	22821.88	0.67	10.2	10.87	0.00	898.39
Kongrakalan	9265.76	31.08	173.61	204.69	0.00	1370.23
Lemoor	5796.08	1.57	76.46	78.03	4.52	976.42
Mankhal	14099.97	0.66	46.93	47.59	0.00	584.49
Nalavelly	6354.74	21.3	74.02	95.32	0.00	702.15
Pahadishareef	14775.64	92.72	142.93	235.65	0.00	1363.19
Phulmamidi	15948.72	81.19	461.69	542.88	0.00	738.68
Rachnoor	14933.72	16.07	299.82	315.89	0.00	939.86
Rangapur	14450.05	37.05	328.41	365.46	0.00	835.63
Tatparthy	15469.4	199.17	868.75	1067.92	0.00	547.93
Yacharam	7047.44	58.6	467.63	526.23	0.00	678.16
Total	173347	651.95	3758.04	4409.99	4.92	12507.7
MOHMMADABAD Range						
Ananthasagar	1324.73	446.15	586.49	1032.64	0.00	325.35
Gadisingapur	18148.13	164.08	1065.96	1230.04	0.00	332.33
Gadriyal	4732.16	433.71	581.01	1014.72	0.00	149.05
Ibrahimpur	4195.64	52.92	717.63	770.55	0.00	562.93
Kalman Kalva	2092.07	658.14	299.18	957.32	0.00	84.12
Komreddypally	19198.08	43.8	472.38	516.18	0.00	1296.73
Kothapally	2109.74	832.61	250.26	1082.87	0.00	55.9
Kulkacherla	7311.28	407.05	785.33	1192.38	-10.77	298.35
Mohammabad	4074.93	1172.22	608.92	1781.14	0.00	160.19
Mujahidpur	7966.35	321.88	217.93	539.81	2.90	25.56
Pargi	28047.7	329.34	407.51	736.85	0.00	918.91



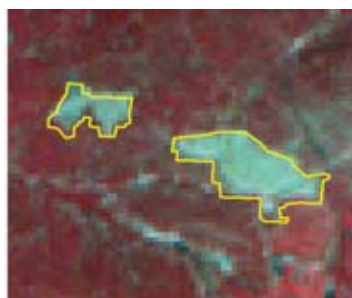
Rangammaguda	1404.09	387.14	138.38	525.52	0.00	75.16
Venkatapur	3366.39	44.39	632.52	676.91	0.00	261.48
Total	103971	5293.44	6763.5	12056.9	-7.87	4546.06
TANDUR RANGE						
Adikicherla	2423.25	250.42	259.94	510.36	0.00	370.7
Gingurthy	14102.03	643.32	143.4	786.72	0.00	138.39
Indur	5301.23	1289.29	494.78	1784.07	0.00	484.08
Juntpally	12738.4	92.43	657.55	749.98	0.00	289.76
Kalkhoda	15268.61	201.44	407.98	609.42	0.00	852.86
Mailwar	18326.41	35.92	683.62	719.54	0.00	1141
Nagulpally	6096.7	484.26	540.08	1024.34	-55.09	652.39
Rampally	9136.55	104.57	270.5	375.07	0.00	586.42
Tandur	7205.26	0	0	0	0.00	239.58
Tattepally	6247.91	129.49	146.28	275.77	0.00	115.54
Total	96846.4	3231.14	3604.14	6835.28	-55.09	4870.72
VIKARABAD RANGE						
Adhalpur	10858.91	749.62	1667.4	2417.02	0.00	609.7
Dharpur	5089.36	79.37	778.07	857.44	-9.45	585.39
Dornal	4708.82	72.54	359.49	432.03	-15.91	500.85
Ekamamidi	13228.05	94.74	449.46	544.2	0.00	929.84
Ibrahimpur	4195.64	0	0.02	0.02	0.00	0
Kothrepally	11127.13	248.89	575.69	824.58	0.00	763.17
Madanpally	6739.31	142.36	328.4	470.76	0.00	915.74
Mansanpally	4761.81	59.75	355.37	415.12	0.00	536.72
Mothukpally	24136.33	243.82	394.67	638.49	0.00	1006.58
Munnorsomaram	2590.33	122.11	165.11	287.22	0.00	708.68
Rasnam	1802.31	45.06	181.17	226.23	0.00	89.51
Rudraram	7900.48	83.29	498.41	581.7	0.00	533.65
Vikarabad	25214.02	549.97	282.78	832.75	0.00	703.23
Total	122353	2491.5	6036.05	8527.55	-25.36	7883.05
Division Total	771000	12222.7	21733.5	33956.2	-137.68	38874.4

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	77.73747
Latitude	17.28090
Area_Ha	6.26
Class	DF TO OF
Comp_No	108
Beat	Adhalpur
Range	Vikarabad
Division	Hyderabad

Longitude	77.74451
Latitude	17.27788
Area_Ha	15.91
Class	OF TO NF
Comp_No	102
Beat	Dornal
Range	Vikarabad
Division	Hyderabad

16. Mahabubnagar Division

Hyderabad Circle

Introduction: Mahabubnagar Forest Division lies in the West Part of Mahabubnagar District, between latitudes 15° 50' 12" and 17° 14' 13" N and longitudes 77° 14' 55" and 78° 48' 07" E. The Geographical Area of the Division is 13,802.75 Km², which is 74.88 % of the total area of the District. The Division having an altitude of 498 m. The district may be physiographically divided into more or less two distinct regions, the plains region with low lying scattered hills and the extensive Amarabad- Farhabad plateau, a continuous range of hills, of an average, elevation of about 800 meters, extending more or less, east-west along the Krishna river on the southern boundary of the district. The hill range is interspersed by several deep valleys, which are almost inaccessible from the plains. Two important rivers, viz. Krishna and Tungabhadra flow through the district. The River Krishna forms Southern boundary of the Division as well as the District.

Land use pattern of the division is given in Table 16.1. The climate of this Division is generally dry with temperatures ranging from 16.9° C to 45°C and the annual rainfall is about 754 mm, received mainly from Southwest monsoons. The soils found in the division are red sandy, Block cotton and Loamy soils

The total **population** of the Division is 3.07 million (2001 Census), which constitutes about 77.75 % of the total population of the District. The **Per capita forest area** is 0.53 ha. The population density is 100 persons per Km². The livestock population is 4.82 million.

Table 16.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	13802.75	
Forest including Scrub	616.85	4.47
Agriculture	11560.48	83.76
Land with Scrub	463.22	3.36
Fallow Lands	412.62	2.99
Settlements	36.58	0.26
Not available for cultivation	250.11	3.35
Rivers/Streams	462.38	1.81

Recorded Forest Area: The total notified forest area of the Division is 573.18. Km², which 4.15% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 442.44 Km² (77.19%), 118.77 Km² (20.72%) and 11.97 Km² (2.09%) of the total forest area respectively.

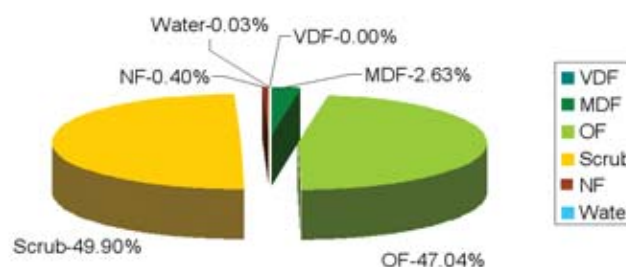
As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical Moist deciduous, Tropical Semi-evergreen and Tropical Thorn Forest types.

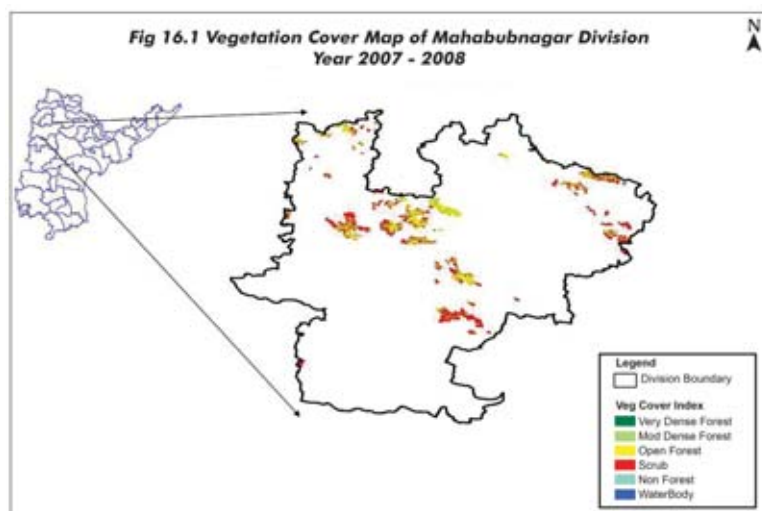
Protected Area: No protected areas are found in this division.

Community Forest Management: There are 207 **Forest Protection Committees** (FPCs) or **Vana Samrakshana Samities** (VSSs) in the Division. An area of 455.62 Km² forests, which is 79.49 % of the notified forests, is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008) is 307.46 Km², which is 2.23% of the total Geographical area. In terms of the forest canopy density classes the Division 16.20 Km² of Moderately Dense Forest and 291.26 Km² Open Forest. The area of the Scrub is 309.22 Km², Non-Forest 2.64 Km² and Water Bodies 0.16 Km². The distribution of the forest cover of the division is shown in Figure 16.1.

- The **distribution of Forest Cover** in the CFM areas is as follows-13.46 km² in Moderately Dense Forest, 232.34 Km² in Open Forest, The area of the Scrub is 208.57 Km², 1.15 Km² is Non-Forest and 0.10 Km² is Waterbodies.
- Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008), shows





a net loss of 25.46 Ha of forest cover during the period of one year.

- The **change matrix**, given in **Table 16.2** reveals that there has been a decrease of 0.09 Km² of moderately dense forest and 0.17 Km² of open forest.
- The simplified forest cover change matrix is given in **Table 16.3** and **Table 16.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments.

- There are **51 Beats** in the Division.

Negative change in Forest Cover is seen in 3 Beats and no change in 48 Beats Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 16.5**.

Table 16.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	16.20	0.00	0.00	0.08	0.00	16.28
Open Forest	0.00	0.00	291.26	0.16	0.01	0.00	291.43
Scrub	0.00	0.00	0.00	309.06	0.10	0.00	309.16
Non-Forest	0.00	0.00	0.00	0.00	2.45	0.00	2.45
Water	0.00	0.00	0.00	0.00	0.00	0.16	0.16
Total of 2008	0.00	16.20	291.26	309.22	2.64	0.16	619.48
Net Change	0.00	-0.09	-0.17	0.06	0.19	0.00	0.00

Table 16.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	307.46	0.25	0	307.71
Degraded Forest		311.61	0	311.61
Water	0	0	0.16	0.16
Total of 2008	307.46	311.86	0.16	619.48
Net Change	0.25	0.25	0	0.00

Table 16.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	616.68	0.19	0	616.87
Barren	0	2.45	0	2.45
Water	0	0	0.16	0.16
Total of 2008	616.68	2.64	0.16	619.48
Net Change	-0.19	0.19	0	0.00

Table 16.5: Beat wise Forest Cover (Area in Ha)

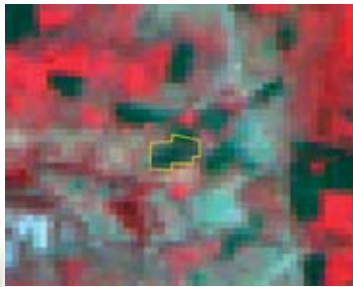
Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
AMANGAL Range						
Amangal	7683.37	0	193.88	193.88	0	448.88
Chandrayanpally	15624.52	0	52.92	52.92	0	1201.67
Charakonda	17879.34	3.26	332.76	336.02	0	1360.07
Cherikonda	21235.95	3.39	857.92	861.31	0	969.47
Cherkur	18970.84	3.45	36.93	40.38	0	594.34
Chhepununthala	23341.94	0	245.81	245.81	0	571.44
Gokaram	85311.71	3.67	641.38	645.05	0	874.84
Kadthal	5123.86	4.04	1093.67	1097.71	0	466.58
Kamadhan	70244.86	2.16	343.77	345.93	0	55.28
Karkalpahad	5667.54	1.06	687.14	688.2	0	610.51
Mudwin	5734.76	1.56	924.68	926.24	0	510.52
Total	276819	22.59	5410.86	5433.45	0	7663.6
KODANGAL range						
Bomraspet	11834.04	85.29	473.07	558.36	-12.11	471.92
Dudyal	33977.37	0.5	176.43	176.93	0	201.94
Gokafaslabad	55669.28	0	135.67	135.67	0	429.64
Kodangal	14646.53	15.9	490.25	506.15	0	269.25
Kothur	7961.68	87.06	1289.29	1376.35	0	504.57
Tekulkote	10174.91	12.02	446.9	458.92	-5.69	556.48
Total	134264	200.77	3011.61	3212.38	-17.8	2433.8
MAHABUBNAGAR Range						
Acharyapur	6439.48	12.87	921.41	934.28	0	846.86
Appaipalli	13419.72	58.57	898.06	956.63	0	694.71
Appannapally	9143.23	239.2	1130.01	1369.21	0	71.22
Boyapally	2713.59	169.02	854.45	1023.47	0	162.13
Chandraspally	8892.19	0	158.35	158.35	0	899.89
Darpally	3376.21	5.64	927.21	932.85	0	487.9
Dhanwada	21942.13	16.68	1149.2	1165.88	0	678.76
Gaddiguda	75619.6	1.43	279.51	280.94	0	452.34
Gajulpet	13606.69	3.34	946.95	950.29	0	519.44
Garlapad	4599.12	21.18	960.9	982.08	0	770.46
Gundiyal	7440.83	8.66	666.62	675.28	0	657.64
Jatram	123278.26	0	637.67	637.67	0	1290.56
Kistapur	4990.39	25.16	1086.3	1111.46	0	1050.76
Kotakonda	9493.26	12.96	738.27	751.23	0	1844.89
Mahaboobnagar	6172.99	1.28	722.5	723.78	0	429.11
Malkapur-g	44563.55	236.84	654.02	890.86	0	61.53
Malkapur-k	3149.31	73.88	995.34	1069.22	0	344.99
Manikonda	4275.05	128.95	1270.88	1399.83	0	348.66
Teegalpally	52797.4	136.62	814.14	950.76	0	18.1
Total	415913	1152.28	15811.8	16964.1	0	11629.95



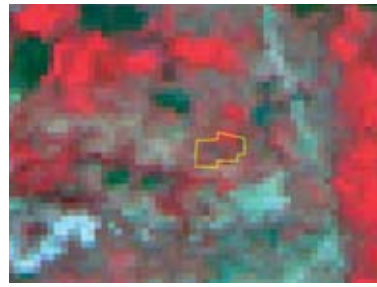
WANAPARTY Range						
Agrahar	59868.29	3.21	461.2	464.41	0	1150.06
Dattaipally	3527.78	1.09	65.32	66.41	0	429.29
Gangaram	40220.33	86.24	816.78	903.02	0	173.03
Gattu	195851.76	0	20.12	20.12	0	623.8
Ghanpur	27425.64	1.57	601.07	602.64	0	981.03
Gopalpet	15140.55	7.7	108.61	116.31	0	245.77
Gudipally	88213.95	0	3.35	3.35	0	172.64
Jangamaiahpally	8693.6	104.47	1003.47	1107.94	0	401.83
Kashimnagar	2704.44	6.06	263.52	269.58	0	671.27
Madhavaopally	5556.44	0	81.48	81.48	0	511.65
Pangal	10887.39	6.69	81.8	88.49	0	476.89
Peedagudem	47546.85	0.04	143.82	143.86	0	654.86
Remaddula	7672.83	36.81	66.61	103.42	-7.66	1129.33
Veeraipally	25233.21	0	772.15	772.15	0	974.73
Wanaparthi	14736.19	0.61	406.53	407.14	0	601.56
Total	553279	254.49	4895.83	5150.32	-7.66	9197.74
Grand total	1380275	1630.13	29130.1	30760.2	-25.46	30925.09

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	77.51661
Latitude	17.09003
Area	3.4 ha
Change	OF TO NF
Compartment No.	283
Beat	Tekulkote
Range	Kodangal
Division	Mahabubnagar



Banyan Tree at Pillalamarri

17. Nalgonda Division

Hyderabad Circle

Introduction: Nalgonda Forest Division lies in the Southern Part of Telangana region, between latitudes 16° 21' 19" and 17° 48' 42" N and longitudes 78° 36' 43" and 80° 04' 27" E. The Geographical Area of the Division is 14,217 Km², which is 5.18% of the total area of the AP. The Division has an average altitude of 421 m. The River Krishna flows on Southern boundary of the Division. Major tributaries of Krishna falling in Division are Musi, Dindi, Pegga vadu, Kangal, Alair, and Halia.

Land use pattern of the division is given in **Table 17.1.**

The climate of this Division is generally dry with **temperatures** ranging from 20° C to 40°C and the annual rainfall is about 772 mm, received mainly from South-west monsoons.

This division contains very rich minerals like Limestone, Quartzite, Granite, Telspar etc. The soil types found mainly are Black cotton, Red and Brown sandy loam.

The total **population** of the Division and District is 3.25 millions (2001 Census). The Per capita forest area is 0.03 ha. The population density is 242 persons per Km². The livestock population is 1.35 million.

Recorded Forest Area: The total notified forest area of the Division is 836.93 Km², which is 5.9% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 832.26 Km² (99.44%), 0.2 Km² (0.03%) and 4.47 Km² (0.53%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous and Tropical Thorn Forest types.

Protected Area: Part of the area of this district i.e. Nagarjunasagar WL Division is one of the four constituent Divisions of Nagarjuna Sagar – Srisailem Tiger Reserve (NSTR), the biggest Tiger Reserve of India. Out of 836.93 Km² of notified forest area 440.89 Km² is included in the Tiger Reserve.

Community Forest Management: There are 95 **Forest Protection Committees** (FPCs) or **Vana Samrakshana Samities** (VSSs) in the Division .An area of 188.41 Km² forests which is 21.19% of the notified forests is under the management of the VSSs.

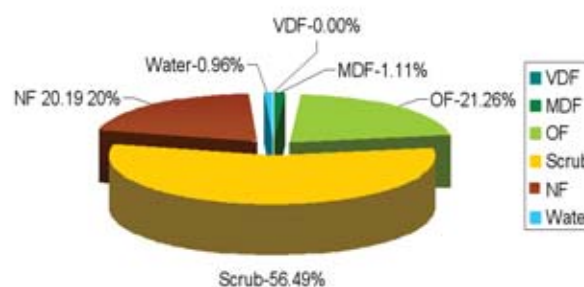
Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 198.83 Km², which is 1.40% of the total Geographical area. In terms of the forest canopy density classes, the Division has 9.85 Km² of Moderately Dense Forest and 188.98Km² of Open Forest. The area of the Scrub is 502.10 Km², Non-Forest 179.57 Km² and Water Bodies 8.54 Km². The distribution of the forest cover of the division is shown in **Figure 17.1.**

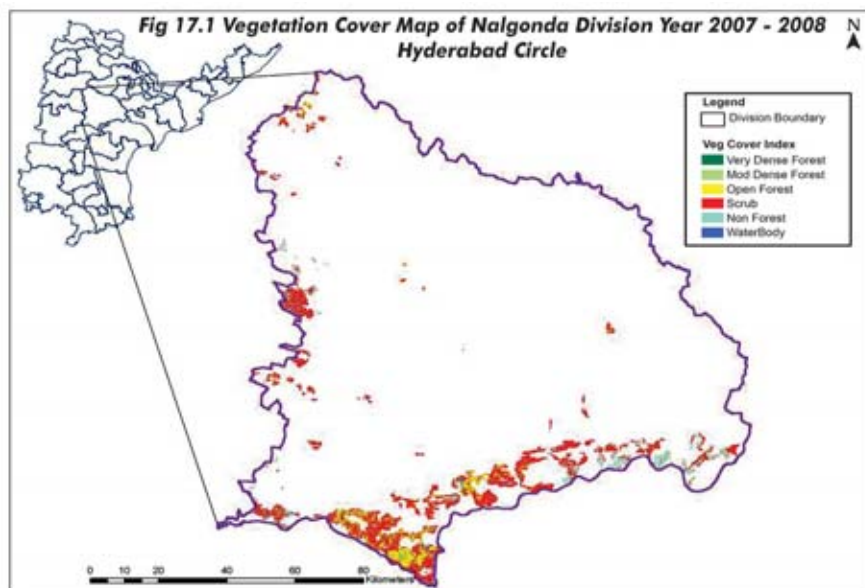
- The **distribution of Forest Cover** in the CFM areas is as follows - 0.18 Km² in Moderately Dense Forests, 20.55 Km² in Open Forests. The area of Scrub is 118.44 Km², 48.96 Km² is Non-Forest & 0.28 Km² is Waterbodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Dec 2007 - Jan 2008), shows no change of forest cover.

Table 17.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	14217	
Forest including Scrub	836.93	5.89
Agriculture	11510.49	80.97
Land with Scrub	836.87	5.88
Fallow Lands	198.84	1.40
Grasslands	14.29	0.10
Settlements	110.62	0.78
Not available for cultivation	111.67	0.78
Rivers/Streams/Rivers	597.29	4.20





• The **change matrix**, given in **Table 17.2** reveals that there has been a decrease of net 11 Ha of scrub forest to non-forest.

The simplified forest cover change matrix is given in **Table 17.3** and **Table 17.4**.

• There are **46 Beats** in the division. There is no change in Forest cover is seen in Beats. Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 17.5**.

Table 17.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	9.85	0.00	0.00	0.00	0.00	9.85
Open Forest	0.00	0.00	188.98	0.00	0.00	0.00	188.98
Scrub	0.00	0.00	0.00	502.10	0.11	0.00	502.21
Non-Forest	0.00	0.00	0.00	0.11	179.46	0.00	179.46
Water	0.00	0.00	0.00	0.00	0.00	8.54	8.54
Total of 2008	0.00	9.85	188.98	502.10	179.57	8.54	889.04
Net Change	0.00	0.00	0.00	-0.11	0.11	0.00	0.00

Table 17.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	198.83	0.00	0.00	198.83
Degraded Forest	0.00	681.67	0.00	681.67
Water	0.00	0.00	8.54	8.54
Total of 2008	198.83	681.67	8.54	889.04
Net Change	0.00	0.00	0.00	

Table 17.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	700.93	0.11	0.00	701.04
Barren	0.11	179.46	0.00	179.46
Water	0.00	0.00	8.54	8.54
Total of 2008	701.04	179.57	8.54	
Net Change	-0.11	0.11	0.00	

Table 17.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHOUTUPPAL Range						
Allapur	5894.25	0.00	34.81	34.81	0.00	1444.19
Bibinagar	47406.01	0.00	58.92	58.92	0.00	627.21
Choutuppal	48808.45	0.00	0.00	0.00	0.00	34.85
Dattaipally	13788.7	0.00	113.82	113.82	0.00	480.01
Jalasingaram	16245.3	0.00	147.26	147.26	0.00	210.77
Malkapur	11881.47	0.00	0.49	0.49	0.00	206.26
Narayanpur	19398.68	0.95	109.94	110.89	0.00	1618.4
Raigir	165102.87	0.00	0.72	0.72	0.00	136.89
Tippaiguda	3160.55	0.00	73.59	73.59	0.00	1220.49
Vasalarri	9427.52	0.00	302.03	302.03	0.00	682.85
Veerareddypalli	3520.67	0.00	319.82	319.82	0.00	200.03
Total	344634.46	0.95	1161.41	1162.36	0.00	6861.94
DEVARAKONDA Range						
Bollaram	8080.56	83.12	2173.56	2256.68	0.00	3401.24
Chitriyala	18452.57	303.05	1549.63	1852.68	0.00	1641.29
Chityal	65613.85	3.89	74.87	78.76	0.00	177.83
Goneboinapally	16597.68	8.97	90.25	99.22	0.00	1432.69
Gundlapally	10041.18	2.36	51.57	53.93	0.00	1064.72
Kamballaapaalli	6733.47	359.46	3018.29	3377.75	0.00	2049.4
Kothapally	14550.88	23.07	1394.47	1417.54	0.00	2722.48
Marriguda	25790.79	0.00	101.31	101.31	0.00	609.58
Mohammadapur	69174.42	0.00	9.38	9.38	0.00	220.58
Mudigonda	28141.56	11.93	24.56	36.49	0.00	559.88
Nalgonda	152055.28	1.46	11.77	13.23	0.00	18.26
Pogilla	5290.33	14.86	765.83	780.69	0.00	2541.27
Rekularam	10754.29	26.94	2445.12	2472.06	0.00	2311.6
Takkadlapally	11250.73	1.28	230.3	231.58	0.00	687.8
Yelgapally	29351.76	0.00	48	48	0.00	980.54
Total	471879.34	840.4	11988.89	12829.29	0.00	20419.2
MIRYALGUDA Range						
Adavidevulapally	3780.8	34.31	129.75	164.06	0.00	1006.24
Chintlammaguda	5744.73	0.00	4.45	4.45	0.00	139.2
Damercherla	10136.84	1.58	35.18	36.76	0.00	1067.45
Gorlaguda	15189.77	2.15	139.11	141.26	0.00	821.85
Gundlapahad	17064.38	0.00	37.94	37.94	0.00	611.97
Indergonda	216646.23	5.14	152.12	157.26	0.00	326.73
Janpahad	10971.55	0.00	21.51	21.51	0.00	873.03
Kallepally	5513.66	0.00	20.58	20.58	0.00	1362.46
Mallareddigudem	86131.18	22.24	87.2	109.44	0.00	1500.61
Miryalguda	56029	2.19	46.6	48.79	0.00	451.82
Mulkacherla	4905.59	0.58	404.5	405.08	0.00	877.49



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Ragadapa	48528.91	0.84	231.29	232.13	0.00	1891.97
Raghunathapalem	10471.42	6.73	9.8	16.53	0.00	748.44
Veeralapalem	8145.15	2.07	97.39	99.46	0.00	1464.2
Total	499259.21	77.82	1417.42	1495.24	0.00	13143.4
NAGARJUNASAGAR Range						
Nagarjunasagar	8393.88	22.95	848.01	870.96	0.00	2243
Nellikal	41642.03	30.01	1477.5	1507.51	0.00	967.71
Pedagattu	13886.25	7.63	764.71	772.34	0.00	2571.66
Tunkinuthala	8492.48	4.08	432.89	436.97	0.00	1827.36
Waddipatla	26561.3	0.00	298.25	298.25	0.00	1363.79
Yellapur	6951.04	0.61	508.84	509.45	0.00	822.99
Total	105926.99	65.28	4330.2	4395.48	0.00	9796.5
Grand total	1421700	984.44	18897.91	19882.35	0.00	50221

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



The Mysterious tree



Nagarjunasagar Dam

18. Badrachalam North Division

Khammam Circle

Introduction: Badrachalam North Forest Division lies in the north part of Khammam District, between latitudes 17° 35' 47" and 18° 37' 46" N and longitudes 80° 22' 22" and 81° 09' 40" E. The Geographical Area of the Division is 2406 Km², which is 15.01 % of the geographical area of the District. The important rivers, which drain in this Division are, the Godavari and the Taliperu.

Land use pattern of the Division is given in **Table 18.1**.

The average highest **temperature** in the summer is 50° C in the month of May and the minimum average temperature in December is 11° C. The average rainfall in this Division is 1361.22 mm.

The soil types found mainly are Black soil and Red loams. The Rock found in this Division is Gneiss. The Mineral resources in this division are Iron, Coal, Kankar and Lime stone.

The total population of the Division is 0.213 million (2001 Census). The **Per capita forest area** is 0.87 ha. The population density is 88 persons per Km².

Table 18.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2406	
Forest including Scrub	1307.66	54.35
Agriculture	649.69	27.00
Land with Scrub	85.74	3.56
Fallow Lands	184.48	7.67
Grasslands	34.10	1.42
Settlements	7.88	0.33
Vegetation outside Forest	69.52	2.89
Water Bodies	66.93	2.78

Recorded Forest Area: The **total notified forest area** of the Division is 1863.82 Km², which is 77.46% of the total geographical area. Reserved-, Protected- and Un-classed forests constitute 1418.72 Km² (76.12%), 333.70 Km² (17.9%) and 111.40 Km² (5.98%) of the total forest area, respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: There is no protected area in the Division.

Community Forest Management: There are 64 JFPCs or **Vana Samrakshana Samithies** (VSSs) in the Division. 118.81 Km² forest area, which constitutes 8.28 % of forest area, is under the management of VSSs.

Forest Cover: The **forest cover in the Division**, based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Dec 2008), is 944.68 Km², which is 39.26% of the total Geographical area. In terms of the forest canopy density classes, the Division has 9.26 Km² of Very Dense Forests, 380.78 Km² Moderately Dense Forests, and 554.64 Km² Open Forest. The area of the Scrub is 362.98 Km², Non-Forest 124.17 Km² and Water Bodies 3.74 Km². The distribution of the forest cover of the Division is shown in **Figure 18.1**.

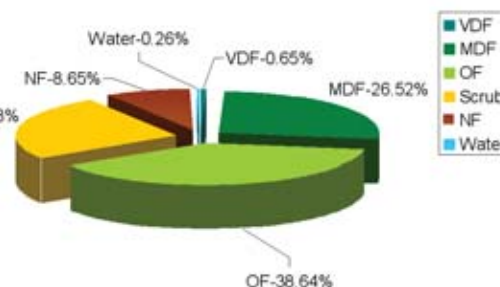
- The **distribution of Forest Cover** in the CFM areas is as follows:- 0.01 Km² in Very Dense Forests, 32.78 Km² in Moderately Dense Forests, 48.07 Km² in Open Forests. The area of the Scrub is 25.48 Km², Non-Forest 12.14 Km² and Water bodies 0.33 Km².

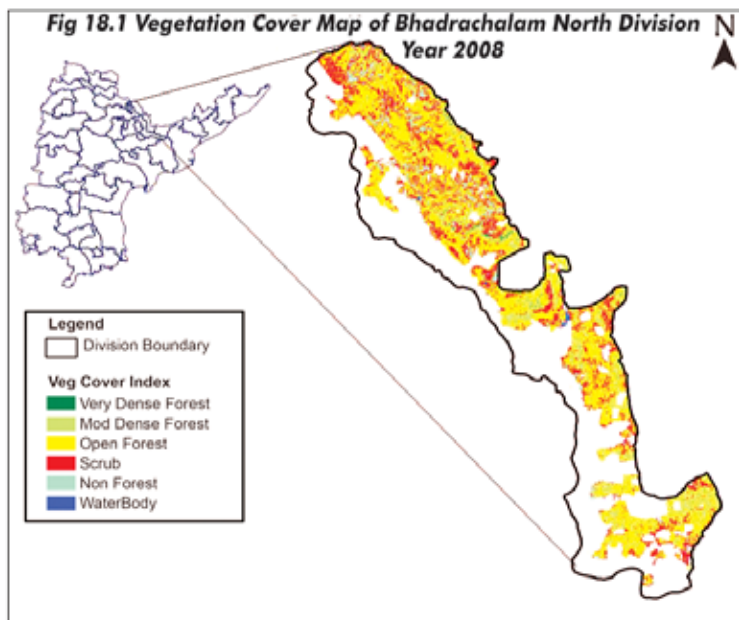
- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Dec 2008) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 963.85 Ha forest cover during the period of one year.

The forest cover change matrix, given in **Table 18.2** reveals that there has been a decrease of 2.74 Km² of moderately dense forest and 6.91 Km² of open forest.

- The **simplified forest cover change matrix** is given in **Table 18.3** and **Table 18.4**.

- On the basis of ground truthing conducted by the





officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments and clearance for rising of plantations.

- There are **52 Beats** in the Division. Negative change in Forest Cover is seen in 25 Beats, and no change in 27 Beats.
- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 18.5**.

Table 18.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	9.26	0.00	0.00	0.00	0.00	0.00	9.26
Moderately Dense Forest	0.00	378.04	0.00	0.11	2.63	0.00	380.78
Open Forest	0.00	0.00	547.74	3.80	3.10	0.00	554.64
Scrub	0.00	0.00	0.00	362.78	0.20	0.00	362.98
Non-Forest	0.00	0.00	0.00	0.00	124.17	0.00	124.17
Water	0.00	0.00	0.00	0.00	0.00	3.74	3.74
Total of 2008	9.26	378.04	547.74	366.69	130.10	3.74	1435.57
Net Change	0.00	-2.74	-6.90	3.71	5.93	0.00	0.00

Table 18.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	935.04	9.64	0.00	944.68
Degraded Forest	0.00	487.15	0.00	487.15
Water	0.00	0.00	3.74	3.74
Total of 2008	935.04	496.79	3.74	1435.57
Net Change	-9.64	9.64	0.00	

Table 18.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1301.73	5.93	0.00	1307.66
Barren	0.00	124.17	0.00	124.17
Water	0.00	0.00	3.74	3.74
Total of 2008	1301.73	130.10	3.74	1435.57
Net Change	-5.93	5.93	0.00	

Table 18.5: Beat wise Forest Cover (Area in Ha)

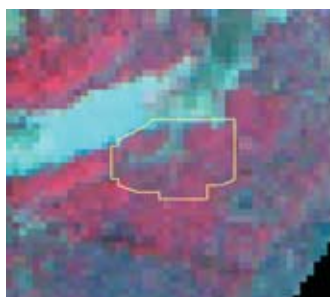
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BHADRACHALAM Range							
Arlagudem	3422.68	0.00	560.81	625.50	1186.31	-151.79	186.34
Bandirevu n	1706.55	1.17	976.53	431.44	1409.14	0.00	238.97
Bandirevu s	1925.11	0.00	988.13	547.57	1535.70	0.00	194.71
Cherupalli	3007.81	0.00	453.55	555.82	1009.37	-38.97	283.41
Jaggaram	2934.16	0.00	1705.71	548.08	2253.79	-11.96	571.47
K.n. Purram	5084.85	0.00	171.63	344.07	515.70	-44.13	154.27
Kallerukunta	2980.56	0.00	664.86	356.26	1021.12	-176.01	217.23
Kondepally	2055.88	0.00	263.79	458.58	722.37	-42.28	109.62
Madhavaoepet	2122.07	0.00	263.04	502.29	765.33	0.00	304.21
Nallakunta	2736.99	0.00	395.41	796.13	1191.54	-33.94	326.62
Nellipaka	6129.59	0.00	23.96	333.29	357.25	-7.23	388.05
Nimmalagudem	4518.35	0.00	637.64	530.77	1168.41	-33.48	170.88
Palamadugu	1810.22	0.00	460.69	641.60	1102.29	-39.08	295.95
Singaram	6059.99	0.00	444.83	373.20	818.03	-41.88	320.64
Tunikicheruvu	2836.55	0.00	489.84	578.06	1067.90	-57.21	228.89
Vissapuram	5326.96	0.00	347.59	922.19	1269.78	-17.70	852.94
Total	54658.32	1.17	8848.01	8544.85	17394.03	-695.66	4844.20
CHERLA Range							
Alubaka	4676.03	0.00	63.95	719.93	783.88	-6.50	506.87
Chalamala	5830.81	292.75	1744.16	1787.74	3824.65	0.00	1274.52
Cherla	5341.78	0.00	149.55	384.62	534.17	0.00	422.29
Doli	6473.35	52.27	1335.54	1835.56	3223.37	0.00	2060.02
Edira	3267.10	2.89	579.71	1141.17	1723.77	0.00	342.17
Gannavaram colony	2421.71	72.16	1022.38	985.98	2080.52	0.00	328.71
Oddipeta	2511.63	5.53	697.12	920.43	1623.08	0.00	656.91
Pusuguppa	2224.52	0.00	1090.26	673.35	1763.61	0.00	177.52
Ramachandrapuram	18503.70	153.90	2988.73	4786.95	7929.58	-12.16	3439.21
Subbampeta	7856.88	26.77	1265.56	780.24	2072.57	0.00	303.84
Suraveedu	2892.23	0.00	170.02	774.47	944.49	0.00	793.54
Total	61999.74	606.27	11106.98	14790.44	26503.69	-18.66	10305.60
DUMMUGUDEM Range							
Anjubaka	6055.49	0.00	264.32	159.38	423.70	-86.60	67.32
Bodanelly	3285.03	10.58	1353.00	879.68	2243.26	-1.18	376.37
Devarapally	4893.00	0.00	292.42	1229.70	1522.12	-53.57	679.72
Kothuru	4389.70	0.00	745.70	611.12	1356.82	-27.93	707.88
Kurnapalli	2175.94	10.17	633.36	643.58	1287.11	0.00	427.97
Mulakanapalli	1901.26	0.00	286.25	390.10	676.35	0.00	187.13
Parnasala	2913.55	0.00	197.49	437.31	634.80	0.00	103.54
Pedamidisileru	3980.63	1.55	1153.85	1352.82	2508.22	-14.47	544.71
R.kothagudem	1634.87	0.00	212.57	905.49	1118.06	-11.20	438.18
Tyagada	4761.90	0.00	614.47	655.91	1270.38	-20.58	648.79
Uyyalamadugu	7443.10	31.80	2194.18	2206.10	4432.08	-5.93	1712.35
Total	43434.47	54.10	7947.61	9471.19	17472.90	-221.46	5893.96



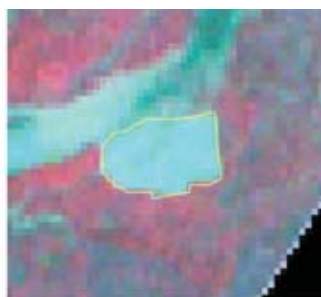
VENKATAPURAM Range							
Arunachalapuram	7988.18	4.21	1481.06	3268.98	4754.25	0.00	1753.80
Bhuvanapalli	5079.77	0.00	67.18	552.83	620.01	0.00	361.72
Cherukuru	2531.34	0.00	0.07	24.58	24.65	0.00	83.45
Dulapuram	3946.39	0.00	221.44	1145.30	1366.74	0.00	689.42
Kadaikal	10378.67	0.57	1335.48	5264.89	6600.94	0.00	2927.87
Nuguru	4188.02	0.00	42.41	239.88	282.29	0.00	328.58
Pavanoor n	4184.35	7.40	1087.73	2034.58	3129.71	0.00	842.71
Pavanoor s	5753.09	68.20	1034.88	1740.62	2843.70	0.00	1646.27
Penugolu n	6912.98	101.82	1638.37	2397.53	4137.72	0.00	1763.42
Penugolu s	3721.20	49.72	887.10	1662.16	2598.98	0.00	945.16
Pragallapally	3435.38	0.00	332.14	872.76	1204.90	-10.98	176.21
Pusuru	3604.04	0.00	149.36	604.74	754.10	-17.09	466.88
Tekulagudem	11109.40	31.86	1599.98	2434.12	4065.96	0.00	3133.06
Venkatapuram	7721.37	1.16	298.05	414.30	713.51	0.00	135.65
Total	80554.18	264.94	10175.25	22657.27	33097.46	-28.07	15254.20
Grand Total	240646.71	926.48	38077.85	55463.75	94468.08	-963.85	36297.96

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries

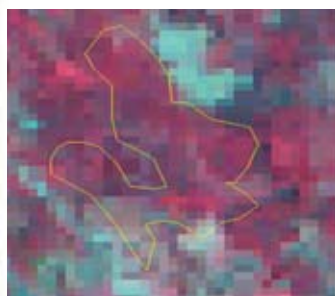


2007

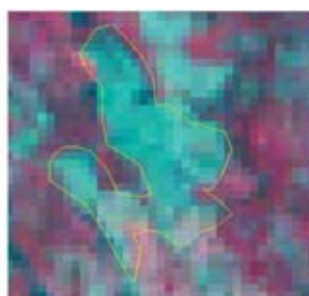


2008

Longitude	80.52413
Latitude	18.39221
Area	17 ha.
Change	EucalyptusPI 2007
Compartment No.	105
Beat	Pusuru
Range	Venkatapuram
Division	Badrachalam North



2007



2008

Longitude	80.51586
Latitude	18.38211
Area	11 ha.
Change	EucalyptusPI 2007
Compartment No.	96
Beat	Pragallapally
Range	Venkatapuram
Division	Badrachalam North



19. Badrachalam South Division

Khammam Circle

Introduction: Badrachalam South Forest Division lies in the eastern part of Khammam District, between latitudes 17° 27' 42" and 17° 54' 05" N and longitudes 81° 05' 45" and 81° 48' 47" E. The Geographical Area of the Division is 1737.52 Km², which is 10.84 % of the geographical area of the District. The main rivers of the division are Godavari, Sabari, Sileru. The Godavari river forms the southern boundary and Sileru river forms northern boundary of the division.

Land use pattern of the Division is given in **Table 19.1**

The **climate** of this Division is generally cool and pleasant with temperatures ranging from 11° C to 49°C and the annual rainfall is about 1362 mm, received mainly from Southwest monsoons.

The soil types found mainly are Black soil, Teak soil and Red loams. The Rock found in this Division is Gneiss. The Mineral resources in this division are Iron, Coal, Kankar and Lime stone.

The **total population of the Division** is 0.085 million (2001 Census). The Per capita forest area is 1.92 ha. The population density is 49 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1632.27 Km², which is 93.92% of the total geographical area. Reserved-, Protected- and Un-classed forests constitute 1076.69 Km² (65.96%), 479.53 Km² (29.38%) and 76.05 Km² (4.66%) of the total forest area, respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: The Division is one of the 4 constituent Divisions of Papikonda Wildlife Sanctuary. Out of 1523.52 Km² of notified Forest area, 271.94 Km² is included in the Papikonda Wildlife Sanctuary.

Community Forest Management: There are 40 **Vana Samrakshana Samithies** (VSSs) in the Division. 86.88 Km² forest area, which constitutes 6.72 % of forest area, is under the management of the VSSs.

Forest Cover: The **forest cover in the Division**, based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Jan 2009), is 1078.32 Km², which is 62.06% of the total Geographical area. In terms of the forest canopy density classes, the Division has 83.57 Km² of Very Dense Forests, 620.74 Km² Moderately Dense Forests, and 374.01 Km² Open Forest. The area of the Scrub is 177.27 Km², Non-Forest 35.07 Km² and Water Bodies 3 Km². The distribution of the forest cover of the Division is shown in **Figure 19.1**.

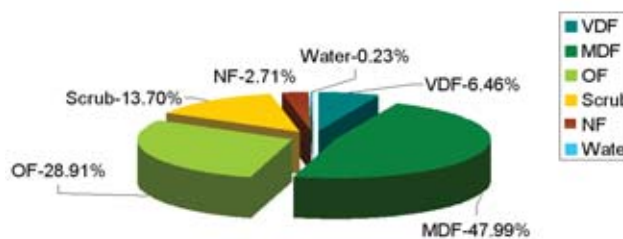
- The **distribution of Forest Cover** in the CFM areas is as follows:- 0.9 Km² in Very Dense Forests, 35.22 Km² in Moderately Dense Forests, 37.38 Km² in Open Forests. The area of the Scrub is 11.85 Km², Non-Forest 1.44 Km² and Water bodies 0.09 Km².

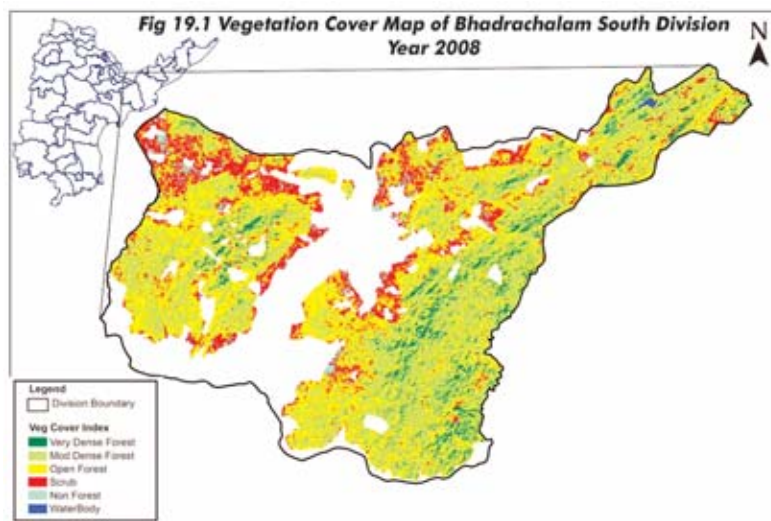
- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Jan 2009) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 121.07 Ha forest cover during the period of one year.

- The **forest cover change matrix**, given in **Table 19.2** reveals that there has been a decrease of 0.43 Km² of moderately dense forest and 0.78 Km² of

Table 19.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	1738	
Forest including Scrub	1255.59	72.24
Agriculture	203.03	11.68
Land with Scrub	37.40	2.15
Fallow Lands	178.75	10.28
Grasslands	1.04	0.06
Settlements	0.49	0.03
Vegetation outside Forest	37.34	2.15
Water Bodies	24.35	1.40





open forest.

- The simplified forest cover change matrix is given in **Table 19.3** and **Table 19.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments.

- There are **48 Beats** in the Division. Negative change in Forest Cover is seen in 11 Beats, and no change in 37 Beats.

- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 19.5**.

Table 19.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Jan 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	83.57	0.00	0.00	0.00	0.00	0.00	83.57
Moderately Dense Forest	0.00	620.31	0.00	0.00	0.43	0.00	620.74
Open Forest	0.00	0.00	373.23	0.21	0.57	0.00	374.01
Scrub	0.00	0.00	0.00	177.00	0.27	0.00	177.27
Non-Forest	0.00	0.00	0.00	0.00	35.07	0.00	35.07
Water	0.00	0.00	0.00	0.00	0.00	3.00	3.00
Total of 2008	83.57	620.31	373.23	177.21	36.34	3.00	1293.66
Net Change	0.00	-0.43	-0.78	-0.06	1.27	0.00	0.00

Table 19.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Jan 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1077.11	1.21	0.00	1078.32
Degraded Forest	0.00	212.34	0.00	212.34
Water	0.00	0.00	3.00	3.00
Total of 2008	1077.11	213.55	3.00	1293.66
Net Change	-1.21	1.21	0.00	

Table 19.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Jan 2009)			Total of 2007
	Green	Barren	Water	
Green	1254.32	1.27	0.00	1255.59
Barren	0.00	35.07	0.00	35.07
Water	0.00	0.00	3.00	3.00
Total of 2008	1254.32	36.34	3.00	1293.66
Net Change	-1.27	1.27	0.00	

Table 19.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHINTUR Range							
Chadalawada	2400.44	324.95	1063.96	473.17	1862.08	-5.15	234.37
Chintur	3558.93	38.80	571.99	379.01	989.80	0.00	183.76
Choppalli	4286.58	0.00	317.89	838.47	1156.36	0.00	118.28
Eruwada	6299.55	605.59	4572.42	806.13	5984.14	0.00	81.70
Guduru	3843.52	21.88	759.12	958.56	1739.56	0.00	690.62
Guletiwada	4108.23	620.10	1800.74	685.88	3106.72	-25.20	624.51
Kalleru	4740.59	0.00	474.51	1152.28	1626.79	-2.92	1376.00
Kansulur	1934.96	28.59	843.58	568.58	1440.75	0.00	208.65
Kondapalli	3073.77	77.57	672.41	752.82	1502.80	0.00	329.01
Kundulur	2691.75	463.62	1137.63	460.26	2061.51	0.00	311.55
Pothampalli	2406.17	39.20	1077.59	1018.81	2135.60	0.00	251.82
Tellavari gudem	4799.52	38.02	740.51	1031.20	1809.73	0.00	661.29
Total	44144.01	2258.32	14032.35	9125.17	25415.84	-33.27	5071.56
KUNAVARAM Range							
Bodanuru	3396.10	5.79	532.26	581.97	1120.02	-7.42	272.03
Buradagudem	6247.88	58.44	824.31	818.85	1701.60	0.00	819.65
Chinanarsingapeta	4932.64	0.00	1072.81	1095.09	2167.90	0.00	263.69
E.d. Pally	7655.82	16.12	1539.29	1925.57	3480.98	0.00	2367.12
G.k.gudem	1869.05	0.00	262.65	291.15	553.80	0.00	204.69
Kuturu	4011.08	170.57	1117.12	842.65	2130.34	0.00	527.67
Maddigudem	3389.25	323.82	1394.11	1100.72	2818.65	0.00	237.06
Murumuru	3789.81	1.06	1376.45	774.89	2152.40	-35.27	193.41
Narakonda	3744.84	86.09	1293.16	871.51	2250.76	0.00	1316.93
Pochavaram	4673.43	3.17	1179.69	974.38	2157.24	-8.06	203.14
Sarivela	3722.25	191.81	980.83	1281.11	2453.75	0.00	1061.46
Singannagudem	4352.81	1.65	405.69	396.79	804.13	0.00	77.30
Tekulabore	3714.55	21.73	878.88	319.50	1220.11	-3.60	128.21
Thatilanka	3290.33	21.06	1534.56	1120.56	2676.18	-10.78	271.82
Uppanapalli	3284.36	217.84	1446.47	961.13	2625.44	-12.71	208.65
Total	62074.20	1119.15	15838.28	13355.87	30313.30	-77.84	8152.83
LAKKAVARAM Range							
Dabbagudem north	1898.96	169.10	1143.52	457.93	1770.55	0.00	112.64
Dabbagudem south	1859.94	133.58	976.16	348.70	1458.44	0.00	201.57
Devarapally	1840.56	58.50	548.99	569.01	1176.50	0.00	273.77
Gondigudem	1818.41	55.12	1173.73	495.39	1724.24	0.00	86.26
Lakkavaram	3741.36	352.77	1538.51	749.24	2640.52	0.00	470.25
Mittawada	1665.30	206.05	947.17	462.70	1615.92	-3.75	32.77
Sukkumamidi(N)	5353.80	516.02	2835.33	965.46	4316.81	0.00	460.23
Sukkumamidi(S)	9826.00	753.05	5468.13	2498.70	8719.88	0.00	973.37
Surawada	1661.75	189.00	1106.43	292.82	1588.25	0.00	63.05
Total	29666.08	2433.19	15737.97	6839.95	25011.11	-3.75	2673.91



V.R.PURAM Range							
Buruguwada	3484.23	324.62	2215.67	659.10	3199.39	0.00	198.44
Chintaregupalli	4175.51	0.00	277.04	377.86	654.90	0.00	154.58
Darapalli	2407.57	95.71	1282.62	570.89	1949.22	0.00	35.18
Gonduru	7575.79	1247.90	4388.89	1371.98	7008.77	0.00	286.93
Jeediguppa	1311.93	16.04	536.58	318.45	871.07	0.00	50.84
Kalthanuru	2536.40	16.25	1011.73	634.41	1662.39	0.00	88.43
Maredupudi	1705.05	174.36	1284.00	227.74	1686.10	0.00	18.76
Peddammattapalli	3095.31	0.00	520.95	1073.28	1594.23	-6.21	522.57
Pocharam	3342.89	141.78	1811.38	815.39	2768.55	0.00	87.79
Tummileru	3997.50	512.45	2009.82	750.38	3272.65	0.00	90.17
Ummadivaram	1934.58	1.50	668.53	757.69	1427.72	0.00	156.68
V.R. Puram	2301.49	0.00	342.06	452.05	794.11	0.00	105.54
Total	37868.25	2530.61	16349.27	8009.22	26889.10	-6.21	1795.91
Grand Total	173752.54	8341.27	61957.87	37330.21	107629.35	-121.07	17694.21

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



Sabari River



Badrachalam Temple



Godavari River

20. Khammam Division

Khammam Circle

Introduction: Khammam Forest Division lies in the Southern part of Khammam District, between latitudes 16° 46' 2" and 17° 33' 35" N and longitudes 79° 48' 10" and 81° 16' 37" E. The Geographical Area of the Division is 6027 Km², which is 37.6 % of the geographical area of the District. The rivers in this division are Munneru, Paleru, Akheru and Wyra.

Land use pattern of the Division is given in **Table 20.1**. The average highest **temperature** in the summer is 47° C and the minimum average temperature in December is 14° C and the average annual rainfall is 997.96mm, received mainly from Southwest monsoons.

The Soil types found mainly in this Division are Sandy soils, Black soils, Red loamy soils and Skeletal soils. The Rock formations found in this Division are Archaens, Puranas and Gondwanas. The Mineral resources in this Division are Coal, Iron ore, Lime stone and Marble, Barytes, Graphite, Chromite, Mica, Garnet, Kyanite and Building stones.

The **total population of the Division** is 1.46 million (2001 Census). The Per capita forest area is 0.85 ha. The population density is 242 persons per Km².

Recorded Forest Area: The **total notified forest area** of the Division is 1246.19 Km², which is 20.68% of the total geographical area. Reserved-, Protected- and Un-classed forests constitute 1131.25 Km² (90.78%), 112.74 Km² (9.04%) and 2.2 Km² (0.18%) of the total forest area, respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: There is no protected area in the Division.

Community Forest Management: There are 110 **Vana Samrakshana Samithies** (VSSs) in the Division. 238.76 Km² forest area, which constitutes 18.06 % of forest area, is under the management of VSSs.

Forest Cover: The **forest cover in the Division** based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Dec 2008), is 890.89 Km², which is 14.78% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.41 Km² of Very Dense Forests, 353.71 Km² Moderately Dense Forests, and 536.77 Km² Open Forest. The area of the Scrub is 351.60 Km², Non-Forest 77.27 Km² and Water Bodies 2.58 Km². The distribution of the forest cover of the Division is shown in **Figure 20.1**.

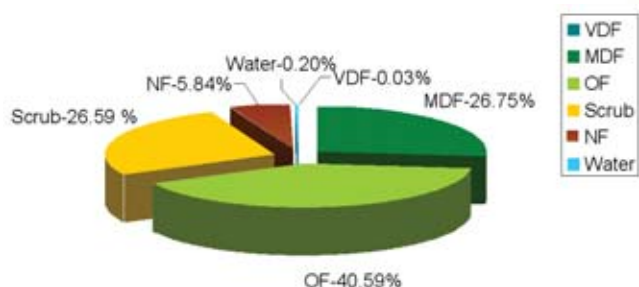
- The **distribution of Forest Cover** in the CFM areas is as follows:- 0.1 Km² in Very Dense Forests, 48.03 Km² in Moderately Dense Forests, 102.74 Km² in Open Forests. The area of the Scrub is 68.23 Km², Non-Forest 18.90 Km² and Water bodies 0.76 Km².

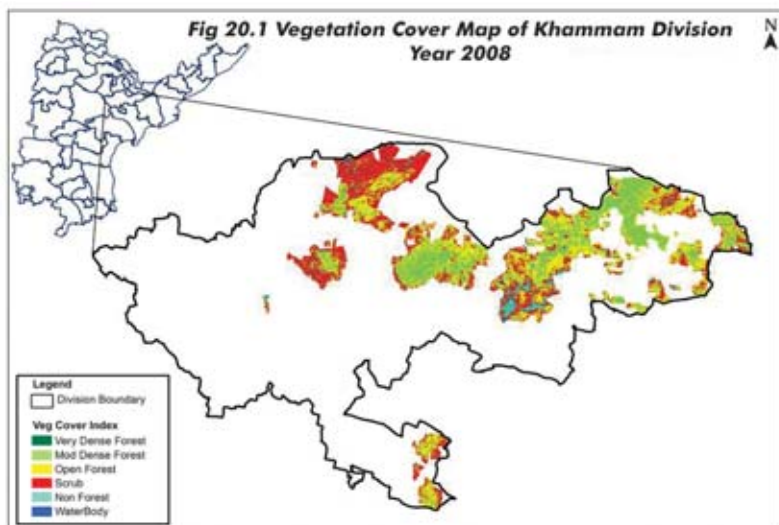
- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Dec 2008) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 1436 Ha forest cover during the period of one year.

- The **forest cover change matrix**, given in **Table 20.2** reveals that there has been a decrease of 2.09 Km² of moderately dense forest and 12.27 Km² of open forest.

Table 20.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	6027	
Forest including Scrub	1242.49	20.62
Agriculture	4166.08	69.12
Land with Scrub	126.96	2.11
Fallow Lands	18.75	0.31
Grasslands	0.00	0.00
Settlements	78.02	1.29
Vegetation outside Forest	303.10	5.03
Water Bodies	91.61	1.52





• The **simplified forest cover change matrix** is given in **Table 20.3** and **Table 20.4**.

• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments. • There are **82 Beats** in the Division. Negative change in Forest Cover is seen in 29 Beats, and no change in 63 Beats.

• Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 20.5**.

Table 20.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.41	0.00	0.00	0.00	0.00	0.00	0.41
Moderately Dense Forest	0.00	351.62	0.00	0.00	2.09	0.00	353.71
Open Forest	0.00	0.00	524.50	2.55	9.72	0.00	536.77
Scrub	0.00	0.00	0.00	351.21	0.39	0.00	351.60
Non-Forest	0.00	0.00	0.00	0.00	77.27	0.00	77.27
Water	0.00	0.00	0.00	0.00	0.00	2.58	2.58
Total of 2008	0.41	351.62	524.50	353.76	89.47	2.58	1322.34
Net Change	0.00	-2.09	-12.27	2.16	12.20	0.00	0.00

Table 20.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	876.53	14.36	0.00	890.89
Degraded Forest	0.00	428.87	0.00	428.87
Water	0.00	0.00	2.58	2.58
Total of 2008	876.53	443.23	2.58	1322.34
Net Change	-14.36	14.36	0.00	

Table 20.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1230.29	12.20	0.00	1242.49
Barren	0.00	77.27	0.00	77.27
Water	0.00	0.00	2.58	2.58
Total of 2008	1230.29	89.47	2.58	1322.34
Net Change	-12.2	12.2	0.00	

Table 20.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
DAMMAPET Range							
Achutapuram	7954.94	1.87	250.81	800.60	1053.28	-15.48	576.21
Anantharam	3857.01	1.85	888.38	1033.15	1923.38	-51.44	380.80
Ankampalem	5609.24	0.00	1370.80	1062.04	2432.84	-5.95	282.68
Aswaraopet	7143.29	0.00	266.35	1243.35	1509.70	-26.00	597.97
Dammapet	7223.07	0.00	308.24	593.51	901.75	-58.31	405.77
Durdapadu	5245.40	0.00	544.50	1897.93	2442.43	-13.37	929.57
Gandugulapalli	3387.56	0.00	274.42	1098.78	1373.20	-262.99	346.33
Gopannagudem	2493.08	0.00	663.28	636.28	1299.56	-17.01	549.81
Katkur	4094.28	0.00	2121.33	618.52	2739.85	0.00	24.74
Maddulamada	3557.85	0.00	1392.60	1186.09	2578.69	0.00	197.35
Mandalpalli	2016.33	1.12	241.95	365.91	608.98	-5.30	106.23
Mustibanda	7519.56	11.15	471.55	359.10	841.80	0.00	142.32
Nagupalli	3350.44	0.00	881.91	1221.56	2103.47	-18.66	136.23
Nallamudi	5851.64	3.08	766.18	1847.39	2616.65	-59.89	466.28
Narayanapuram	8143.53	0.00	603.59	1535.03	2138.62	-15.09	628.35
Patwarigudem	2813.97	0.00	663.34	562.88	1226.22	-70.50	82.56
Pusakunta	4228.93	0.00	2724.31	677.78	3402.09	-13.55	31.24
Tirumalkunta	11546.39	0.00	3163.95	1244.81	4408.76	-15.77	150.39
Vinayakapuram	7229.18	0.00	999.51	1817.17	2816.68	-214.56	524.59
Total	103265.69	19.07	18597.00	19801.88	38417.95	-863.87	6559.42
KAREPALLI Range							
Burdaraghavapuram	4064.08	0.00	288.95	1146.93	1435.88	0.00	401.75
Cheemalapadu	1677.40	0.04	6.42	422.40	428.86	0.00	407.16
Gadepadu	844.88	1.57	19.36	85.55	106.48	0.00	596.71
Kesupalli	2964.46	0.00	74.02	772.05	846.07	0.00	941.63
Madampalli	2941.04	0.78	3.95	43.32	48.05	0.00	449.24
Maddulapalli	5807.01	0.00	231.85	504.91	736.76	0.00	727.31
Muthyalampadu	3694.28	0.00	6.10	143.66	149.76	0.00	1779.79
N.s. Kothur	4390.28	0.00	1.72	37.80	39.52	0.00	1107.61
Ootokur	9334.76	0.00	503.79	541.05	1044.84	0.00	790.84
Papkol	7371.68	0.00	201.95	1549.17	1751.12	0.00	824.83
Rajaraopet	2991.63	0.00	152.61	1077.21	1229.82	0.00	470.71
Ramannapalem	3902.36	0.00	0.13	399.69	399.82	0.00	1297.99
Regaboinagudem	3013.92	0.00	20.33	292.46	312.79	0.00	1368.28
Relakayalapalli	1979.11	0.00	18.12	693.11	711.23	0.00	747.10
Singareni/karepalli	9084.18	0.00	2.30	60.01	62.31	0.00	122.03
Tadkalpudi	1053.69	0.00	8.54	65.54	74.08	0.00	384.73
Timmaraopeta	2158.69	0.00	371.07	473.02	844.09	-14.45	413.67
Total	67273.45	2.39	1911.21	8307.88	10221.48	-14.45	12831.38
SATHUPALLI Range							
Annapureddipalli	2299.62	0.00	534.60	479.36	1013.96	-41.14	52.82
Bhavanapalem	2964.17	0.00	72.92	431.82	504.74	-100.81	244.58
Buggapadu	1963.83	0.00	126.90	692.21	819.11	0.00	380.47



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Chandraipalem	1100.74	0.00	503.98	377.84	881.82	0.00	27.47
Cherukupalli	2403.93	0.00	416.27	775.52	1191.79	0.00	378.44
Chowdaram	2389.41	0.00	15.32	331.08	346.40	0.00	331.53
Gollagudem	14824.08	0.00	2.75	210.60	213.35	0.00	239.87
Kakarlappalli	4253.58	0.00	104.84	753.06	857.90	0.00	646.04
Kistaram	1422.90	0.00	20.85	228.56	249.41	0.00	137.67
Kompalli	8360.28	0.00	43.10	659.06	702.16	0.00	382.04
Lankapalli	3237.94	0.00	0.60	151.61	152.21	0.00	386.35
Pentalam	3936.27	0.00	526.30	1133.14	1659.44	-89.15	286.69
R.c. Puram	1908.45	0.00	201.61	528.33	729.94	0.00	218.91
Rajapuram(namaram)	3311.82	0.00	99.18	1231.92	1331.10	-59.09	634.51
Rudrakshapalli	3995.98	1.79	519.22	1066.49	1587.50	-3.16	239.40
Sathupalli	17275.02	0.00	18.99	512.84	531.83	0.00	364.09
Yatalkunta	2210.38	0.00	673.15	589.77	1262.92	-107.14	183.07
Total	77858.40	1.79	3880.58	10153.21	14035.58	-400.49	5133.95
TALLADA Range							
Arkalpadu	8070.73	0.00	192.94	293.66	486.60	0.00	695.37
Bhimaram	33116.74	0.00	184.71	827.45	1012.16	0.00	410.03
Buchireddipalem	11478.16	0.00	0.00	139.89	139.89	0.00	306.77
Burugugudem	3189.96	0.00	761.01	796.51	1557.52	0.00	337.53
Chintagurthi	21381.24	0.00	80.63	200.31	280.94	0.00	748.55
Erlapudi	13211.98	6.01	302.47	350.43	658.91	0.00	810.52
Gopalpet	4121.57	0.00	992.15	479.28	1471.43	0.00	116.92
Gowaram	2727.50	0.00	227.21	1248.92	1476.13	0.00	493.81
Gubbagurthi	10396.46	0.00	301.36	642.20	943.56	0.00	427.80
Gudur	11381.19	1.52	810.93	419.64	1232.09	0.00	305.08
Gundepudi	4879.47	0.00	62.13	480.11	542.24	-48.50	633.04
Guntipalligoparam	2261.81	0.00	37.38	540.45	577.83	0.00	207.50
Kacharam	2307.37	0.00	20.85	470.44	491.29	0.00	589.10
Kallur	17262.87	0.00	1017.38	774.49	1791.87	-52.84	395.65
Kusumanchi	48946.50	0.00	0.00	0.00	0.00	0.00	0.00
Lingagudem	6436.03	0.00	174.97	358.39	533.36	0.00	283.72
Lokaram	4639.44	7.41	1504.57	469.69	1981.67	0.00	103.16
Maddukur	3242.37	0.00	619.33	1680.56	2299.89	-16.92	313.07
Mekalkunta	8552.77	1.55	144.27	467.68	613.50	0.00	862.14
Nacharam	1949.80	0.00	509.56	702.56	1212.12	0.00	396.27
Nallabandabodu	7356.47	0.00	1075.23	1004.61	2079.84	-6.70	333.50
Nelakondapally	55462.46	0.00	0.00	0.00	0.00	0.00	0.00
Pangidi	3268.27	1.19	15.97	46.43	63.59	0.00	98.67
Ravikampad	3833.28	0.00	213.71	1018.13	1231.84	-17.60	463.55
Remidicherla	1951.53	0.00	84.73	412.98	497.71	0.00	189.25
Tallapenta	4682.33	0.00	1130.47	785.15	1915.62	-14.63	206.42
Tummalapalli	23094.52	0.00	98.64	349.00	447.64	0.00	578.69
Venkatagiri	28622.42	0.00	417.59	307.90	725.49	0.00	163.59
Venkatapuram	6499.24	0.00	2.38	147.32	149.70	0.00	165.53
Total	354324.48	17.68	10982.57	15414.18	26414.43	-157.19	10635.23
Grand Total	602722.02	40.93	35371.36	53677.15	89089.44	-1436.00	35159.98

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

21. Kothagudem Division

Khammam Circle

Introduction: Kothagudem Forest Division lies in the Western part of Khammam District, between latitudes 17° 19' 55" and 18° 4' 49" N and longitudes 80° 02' 46" and 80° 50' 44" E. The Geographical Area of the Division is 2503 Km², which is 15.62 % of the geographical area of the District. The highest peak of pancha pandvulu in this Division is 729.38 m. The area is undulated and interrupted with hills and hillocks of igneous with elevation ranging from 12m to 500 m. Kalakandavagu which forms major sources of water for Bayyaram cheruvu. Morredu river and Kinnerasani river are the perennial sources of water in this Division.

Land use pattern of the Division is given in **Table 21.1.**

The climate of this Division is generally dry with temperatures ranging from 28° C to 50° C and the annual rainfall is about 934.69 mm, received mainly from Southwest monsoons.

The most important mineral deposit in the Division is Coal, which is being exploited by M/s. Singareni Collieries Company Ltd. The other minerals are Iron Ore, Barytes, Graphite, and Copper Ore. The Rocks found in the Division are Lime Stone, Marble, and Garnet. Dolomite deposits occur in Bayyaram Range and are being exploited by M/s Steel Authority of India Limited (SAIL). The soil types found mainly are Sandy soils, Black cotton, Red alluvial loam, and Skeletal soils. The soils are rich in fertility.

The total population of the Division is 0.434 million (2001 Census). The Per capita forest area is 0.35 ha. The population density is 173 persons per Km².

Recorded Forest Area: The **total notified forest area** of the Division is 1538.04 Km², which is 61.45% of the total geographical area. Reserved-, Protected- forests constitute 1321.03 Km² (85.89%), 217.01 Km² (14.11%) of the total forest area, respectively. However, 103.50 Km² of notified forest area of the Division is constituted as Paloncha WLM Division.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: Out of 1538.04 Km² of notified forest area of old Kothagudem Division, 103.50 Km² of notified forest area is constituted as Paloncha WLM Division.

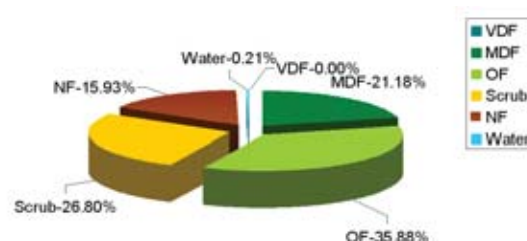
Community Forest Management: There are 106 **Vana Samrakshana Samithies** (VSSs) in the Division. 238.62 Km² forest area, which constitutes 14.17 % of forest area, is under the management of VSSs.

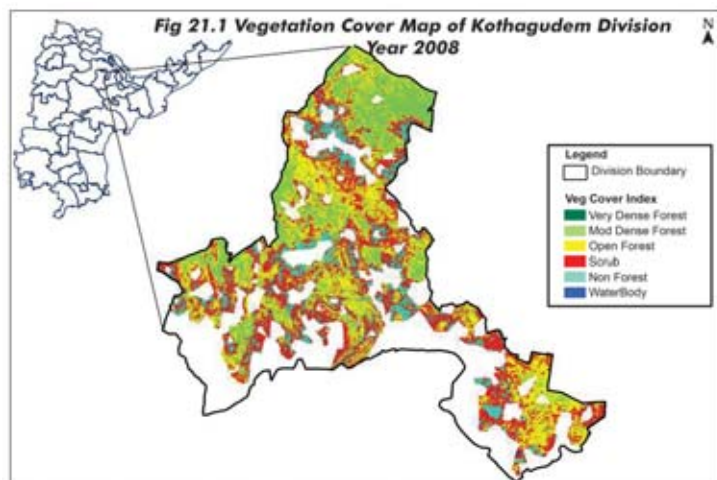
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Dec 2008), is 960.82 Km², which is 38.39% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.04 Km² of Very Dense Forests, 356.71 Km² Moderately Dense Forests, and 604.07 Km² Open Forest. The area of the Scrub is 451.31 Km², Non-Forest 268.24 Km² and Water Bodies 3.51 Km². The distribution of the forest cover of the Division is shown in **Figure 21.1.**

• The **distribution of Forest Cover** in the CFM areas is as follows:- 26.38 Km² in Moderately Dense Forests, 106.46 Km² in Open Forests. The area of the Scrub is 70.66 Km², Non-Forest 34.95 Km² and Water bodies 0.17 Km².

Table 21.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2503	
Forest including Scrub	1412.13	56.42
Agriculture	879.50	35.14
Land with Scrub	72.86	2.91
Fallow Lands	22.30	0.89
Grasslands	0.49	0.02
Settlements	20.80	0.83
Vegetation outside Forest	75.75	3.03
Water Bodies	19.17	0.77





• **Comparison** of the current forest cover (Satellite data of Oct 2008 - Dec 2008) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 989.84 Ha forest cover during the period of one year.

• The **forest cover change matrix**, given in **Table 21.2** reveals that there has been a decrease of 0.17 Km² of moderately dense forest and 9.73 Km² of open forest.

• The simplified forest cover change matrix is given in **Table 21.3**. and **Table 21.4**. • On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest

cover is due to encroachments and clearance for raising of plantations. • There are **76 Beats** in the Division. Negative change in Forest Cover is seen in 29 Beats, and no change in 47 Beats. • Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 21.5**.

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.04	0.00	0.00	0.00	0.00	0.00	0.04
Moderately Dense Forest	0.00	356.54	0.00	0.00	0.17	0.00	356.71
Open Forest	0.00	0.00	594.34	1.34	8.39	0.00	604.07
Scrub	0.00	0.00	0.00	446.66	4.65	0.00	451.31
Non-Forest	0.00	0.00	0.00	0.00	268.24	0.00	268.24
Water	0.00	0.00	0.00	0.00	0.00	3.51	3.51
Total of 2008	0.04	356.54	594.34	448.00	281.45	3.51	1683.88
Net Change	0.00	-0.17	-9.73	-3.31	13.21	0.00	0.00

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	950.92	9.90	0.00	960.82
Degraded Forest	0.00	719.55	0.00	719.55
Water	0.00	0.00	3.51	3.51
Total of 2008	950.92	729.45	3.51	1683.88
Net Change	-9.90	9.90	0.00	

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1398.92	13.21	0.00	1412.13
Barren	0.00	268.24	0.00	268.24
Water	0.00	0.00	3.51	3.51
Total of 2008	1398.92	281.45	3.51	1683.88
Net Change	-13.21	13.21	0.00	

Table 21.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BAYYARAM Range							
Bayyaram	7322.02	0.00	252.76	1151.26	1404.02	0.00	705.79
Gowararam	2313.88	0.00	26.32	77.33	103.65	0.00	282.21
Kachanpalli	1843.41	0.00	599.62	433.72	1033.34	0.00	203.77
Karukonda	4059.74	0.00	216.04	708.67	924.71	0.00	1144.07
Laxmipuram	2973.24	0.00	462.27	781.80	1244.07	0.00	543.31
Miryalapenta	2042.88	0.00	492.49	625.95	1118.44	0.00	468.07
Motlatimmapuram (N)	3985.74	0.00	1243.59	1393.22	2636.81	0.00	860.26
Motlatimmapuram (S)	2842.51	0.00	704.36	896.91	1601.27	0.00	656.80
Nagaram	11771.28	0.00	371.63	981.08	1352.71	0.00	956.70
Namalapadu	1332.97	0.00	469.80	399.81	869.61	0.00	209.24
Pandipampula	2875.36	0.00	548.92	792.61	1341.53	0.00	569.32
Total	43363.03	0.00	5387.80	8242.36	13630.16	0.00	6599.54
GUNDAL Range							
Adiviramavaram	4378.03	0.00	2857.51	1183.90	4041.41	0.00	120.55
Damaratogu east	1936.13	0.00	826.36	860.19	1686.55	0.00	153.45
Damaratogu north	3129.71	0.00	1373.47	1045.44	2418.91	-1.80	189.91
Damaratogu west	2952.52	0.00	1372.05	1163.19	2535.24	-2.65	387.01
Dongatogu	6056.35	0.00	3319.97	1525.82	4845.79	0.00	504.97
Gundala	7447.64	0.00	459.77	2885.53	3345.30	-8.45	1289.98
Jinnelagudem	1230.53	0.00	73.81	644.81	718.62	0.00	407.06
Kachanpalli	5107.09	0.00	624.39	1448.07	2072.46	0.00	1170.90
Karnigudem	5062.65	0.00	2504.01	1059.92	3563.93	-16.45	724.29
Kodavatancha	5136.19	0.00	322.51	1263.29	1585.80	0.00	1186.20
Mamakannu	3153.99	0.00	177.53	941.63	1119.16	-7.90	593.01
Narsapuram	3023.72	0.00	76.47	1403.25	1479.72	-6.98	991.67
Ravigudem	1248.12	0.00	80.42	704.40	784.82	-2.90	240.43
Sayanpalli	3608.16	0.00	127.87	422.56	550.43	0.00	1099.72
Suddarevu	3523.65	0.00	2815.62	428.42	3244.04	0.00	235.65
Valasala	3399.64	0.00	187.11	619.85	806.96	-6.20	1109.03
Total	60394.12	0.00	17198.87	17600.27	34799.14	-53.33	10403.83
KOMRARAM Range							
Anantharam	2692.46	0.00	743.05	808.23	1551.28	0.00	347.42
Chinaregulagudem	1917.35	0.00	727.56	815.36	1542.92	-1.53	269.80
Komraram	2836.20	0.00	28.99	255.53	284.52	-36.39	387.02
Manikyaram	2522.34	0.00	867.75	796.52	1664.27	0.00	379.54
Mittapalli	3550.86	0.00	96.76	658.89	755.65	0.00	1387.86
Polaram	4546.64	0.00	355.46	1319.19	1674.65	-2.72	1084.39
Shammunigudem	2433.02	0.00	1114.79	647.59	1762.38	0.00	183.43
Shatpalli	3595.75	0.00	1314.07	1091.34	2405.41	0.00	336.79
Vennelbail	2396.74	0.00	641.02	1363.94	2004.96	0.00	255.43
Yedapalagudem	1772.30	0.00	391.28	575.41	966.69	0.00	363.41
Yellapuram	2811.07	0.00	597.42	1168.81	1766.23	-3.82	509.77
Total	31074.73	0.00	6878.15	9500.81	16378.96	-44.46	5504.86



KOTHAGUDEM Range							
Ansetpalli	6592.66	0.00	108.06	485.28	593.34	0.00	1106.88
Bodu	3964.88	0.00	72.89	332.60	405.49	0.00	994.59
Chatakonda	4289.05	0.00	0.00	140.80	140.80	0.00	1122.95
Hemachandrapuram	1482.72	0.00	0.83	133.26	134.09	-35.41	143.26
Kistaram	3951.18	0.00	1017.38	784.70	1802.08	-2.19	285.13
Koppurai	2969.76	0.00	414.17	669.82	1083.99	-9.52	943.54
Koyagudem	4246.88	0.00	12.40	193.71	206.11	0.00	474.86
Medlamadugu	2362.04	0.00	115.64	1083.57	1199.21	-30.41	588.59
Murlipad	2275.45	0.00	350.68	1020.10	1370.78	0.00	470.28
Total	32134.62	0.00	2092.05	4843.84	6935.89	-77.53	6130.08
RAMAVARAM Range							
Abbugudem	1196.92	0.00	12.74	583.83	596.57	-124.67	157.39
Annaram	1847.71	0.00	35.51	1314.98	1350.49	-13.58	462.10
Chaparalapally_east	3680.50	0.00	68.69	1072.75	1141.44	-17.79	407.92
Chaparalapally_west	1253.86	0.00	24.33	698.59	722.92	-162.97	225.89
Damarachrla	4450.39	0.00	2.12	389.00	391.12	-40.13	439.46
Gareebpet	5411.28	0.00	0.00	415.35	415.35	0.00	749.40
Kamalapuram	2469.28	3.85	60.25	884.44	948.54	0.00	945.84
Marrigudem	2325.25	0.00	19.11	853.38	872.49	-134.02	479.40
Musalivarre	2542.20	0.00	172.44	1187.31	1359.75	0.00	384.97
Penagadapa	2124.24	0.00	2.28	379.98	382.26	-108.82	530.43
Penuballi	2675.94	0.00	165.64	1389.67	1555.31	0.00	891.85
Ramavaram	2382.62	0.00	0.00	127.18	127.18	-97.81	632.85
Sandrukunta	1177.62	0.00	44.35	793.98	838.33	0.00	305.61
Satyampet	2952.91	0.00	490.91	1857.13	2348.04	-17.37	282.15
Thippanpalli	6343.29	0.00	0.00	245.19	245.19	-72.47	826.13
Total	42834.01	3.85	1098.37	12192.76	13294.98	-789.63	7721.39
YELLANDU Range							
Daniyalapadu	781.02	0.00	5.35	55.85	61.20	0.00	390.27
Dharmapur	2963.26	0.00	554.93	1359.84	1914.77	-14.95	536.94
Jodbouli	3040.44	0.00	248.16	651.70	899.86	0.00	745.12
Kollapur	1741.95	0.00	323.21	660.60	983.81	0.00	577.96
Kommugudem	4264.94	0.00	305.73	712.72	1018.45	0.00	877.38
Kunterla	2870.02	0.00	219.62	609.51	829.13	0.00	613.17
Madharam	2975.53	0.00	12.70	56.96	69.66	0.00	596.39
Patharalagadda	3217.40	0.00	212.12	1024.66	1236.78	0.00	796.47
Perepalli	3502.94	0.00	7.35	129.17	136.52	0.00	509.80
Pubally	2767.03	0.00	181.86	592.61	774.47	-6.58	790.35
Pusapalli	2373.68	0.00	459.50	651.26	1110.76	0.00	772.09
Thummalachelka	4368.46	0.00	414.95	1285.88	1700.83	-3.36	798.02
Todtalagudem	1001.61	0.00	69.78	191.29	261.07	0.00	497.65
Urugutta	4625.41	0.00	0.58	44.35	44.93	0.00	270.12
Total	40493.69	0.00	3015.84	8026.40	11042.24	-24.89	8771.73
Grand Total	250294.20	3.85	35671.08	60406.44	96081.37	-989.84	45131.43

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

22. Paloncha Division

Khammam Circle

Introduction: Paloncha Forest Division lies in the Central part of Khammam District, between latitudes 17° 19' 4" and 18° 09' 10" N and longitudes 80° 25' 56" and 81° 30' 17" E. The Geographical Area of the Division is 2530 Km², which is 15.78 % of the geographical area of the District. The elevation varies from 12m to 600m above Mean Sea Level in this Division. The Godavari River, which forms the North-eastern boundary of this Division is the perennial river in this Division. Other rivers are Kinnerasani, Pamleru and Morredy which almost dry up in summer. Besides these rivers, few big tanks Tummalachervu, Parentalacheruvu also exist in this Division. Some important projects are Kinnerasani and Mukamamidi.

Land use pattern of the Division is given in **Table 22.1.**

The climate of this Division is generally cool fresh and pleasant with the maximum temperature is 49° C and the minimum is 10°C and the average annual rainfall is ranging from 934.96 to 1334 mm, received mainly from Southwest monsoons.

The Soil types found mainly in this Division are Red Sandy Loam, Red Loam, Black-cotton, Alluvium and Saline. The Rock formations found in this Division are Quartzite, Gneiss, Sandstone, Granite, Schist and Marble. The important mineral deposit in this Division is coal which is being exploited by the Singareni Collieries Company

Ltd. The other minerals found in this Division are Barytes, Graphite, Hematite (Iron ore) and soapstone.

The total population of the Division is 0.382 million (2001 Census). The Per capita forest area is 0.56 ha. The population density is 151 persons per Km².

Recorded Forest Area: The total notified forest area of the Old Division is 2156.62 Km², which is 85.24% of the total geographical area. Reserved-, Protected- and Un-classed forests constitute 1545.8 Km² (71.68%), 498.04 Km² (23.09%) and 112.78 Km² (5.23%) of the total forest area, respectively. However, 582.88 Km² of notified forest area of the Division is constituted as Paloncha WLM Division.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: Out of 2156.62 Km² of notified forest area of old Paloncha Division, 582.88 Km² of notified forest area is constituted as Paloncha WLM Division.

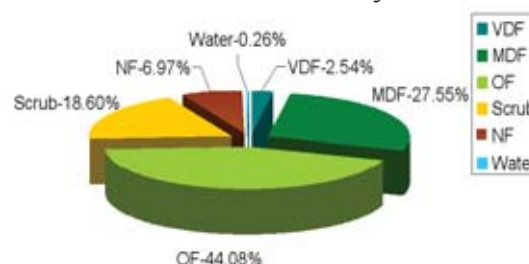
Community Forest Management: There are 137 Vana Samrakshana Samithies (VSSs) in the Division. 284.24 Km² forest area, which constitutes 18.66 % of forest area, is under the management of VSSs.

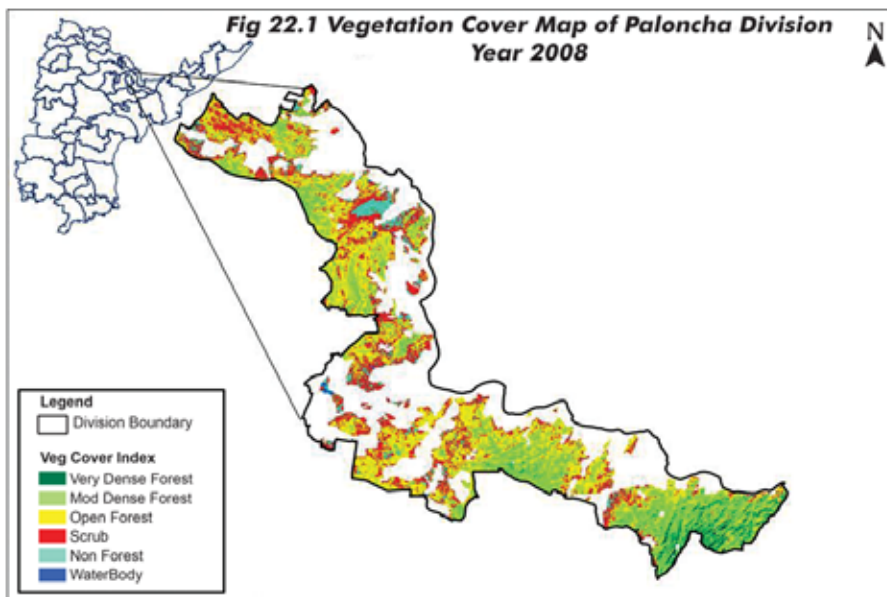
Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Dec 2008), is 1129.94 Km², which is 44.66% of the total Geographical area. In terms of the forest canopy density classes, the Division has 38.77 Km² of Very Dense Forests, 419.75 Km² Moderately Dense Forests, and 671.42 Km² Open Forest. The area of the Scrub is 283.43 Km², Non-Forest 106.13 Km² and Water Bodies 4.02 Km². The distribution of the forest cover of the Division is shown in **Figure 22.1.**

• The **distribution of Forest Cover** in the CFM areas is as follows: 0.34 Km² in Very Dense Forest, 53.72 Km² in Moderately Dense Forests, 155.20 Km² in Open Forests, The area of the Scrub is 59.56 Km², Non-Forest 15.26 Km² and

Table 22.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2530	
Forest including Scrub	1413.37	55.86
Agriculture	813.73	32.16
Land with Scrub	54.10	2.14
Fallow Lands	77.87	3.08
Grasslands	2.06	0.08
Settlements	31.88	1.26
Vegetation outside Forest	72.76	2.88
Water Bodies	64.22	2.54





Water bodies 0.16 Km².

- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Dec 2008) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 2169.70 Ha forest cover during the period of one year.
- The **forest cover change matrix**, given in Table 22.2 reveals that there has been a decrease of 1.48 Km² of moderately dense forest and 20.21 Km² of open forest.
- The simplified forest cover change matrix is given in **Table 22.3** and **Table 22.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments and clearance for rising of plantations.
- There are **65 Beats** in the Division. Negative change in Forest Cover is seen in 37 Beats, and no change in 28 Beats
- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 22.5**.

Table 22.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	38.77	0.00	0.00	0.00	0.00	0.00	38.77
Moderately Dense Forest	0.00	418.27	0.00	0.00	1.48	0.00	419.75
Open Forest	0.00	0.00	651.20	5.43	14.79	0.00	671.42
Scrub	0.00	0.00	0.00	281.34	2.09	0.00	283.43
Non-Forest	0.00	0.00	0.00	0.00	106.13	0.00	106.13
Water	0.00	0.00	0.00	0.00	0.00	4.02	4.02
Total of 2008	38.77	418.27	651.20	286.77	124.49	4.02	1523.52
Net Change	0.00	-1.48	-20.21	3.34	18.36	0.00	0.00

Table 22.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1108.24	21.7	0.00	1129.94
Degraded Forest	0.00	389.56	0.00	389.56
Water	0.00	0.00	4.02	4.02
Total of 2008	1108.24	411.26	4.02	1523.52
Net Change	-21.7	21.7	0.00	

Table 22.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1395.01	18.36	0.00	1413.37
Barren	0.00	106.13	0.00	106.13
Water	0.00	0.00	4.02	4.02
Total of 2008	1395.01	124.49	4.02	1523.52
Net Change	-18.36	18.36	0.00	

Table 22.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
AMARARAM Range							
Amararam	6978.26	95.63	2322.18	2140.12	4557.93	-20.04	341.70
Cheeravalli	1557.91	0.00	355.39	542.53	897.92	-22.21	52.85
Damaracherla	5083.74	44.41	2136.55	1596.70	3777.66	0.00	193.40
Gundalapadu	2563.51	4.69	931.52	1216.77	2152.98	0.00	174.63
Kothur	5519.54	0.00	1047.15	1784.33	2831.48	-7.49	402.70
Raigudem	2931.25	3.52	99.80	1337.09	1440.41	0.00	313.46
Sridhara	5240.91	0.00	12.70	1283.18	1295.88	-7.80	436.73
Timmampet	2526.82	4.91	118.64	1439.54	1563.09	0.00	763.95
Timmampet baroon	1812.00	2.23	126.17	506.97	635.37	-7.44	167.73
Vinjarum	2595.06	0.00	285.00	811.69	1096.69	-41.63	174.61
Total	36809.00	155.39	7435.10	12658.92	20249.41	-106.61	3021.76
ASWAPURAM Range							
Aswapuram	6169.62	6.70	742.43	1472.29	2221.42	-123.54	442.94
Chintriyala	4590.62	0.00	3.22	104.05	107.27	0.00	487.84
Eravendi	1868.47	0.00	247.88	377.75	625.63	0.00	206.82
Gondigudem	3189.82	3.35	920.10	971.36	1894.81	-31.09	421.39
Kistasagar	2406.14	0.00	450.01	1151.08	1601.09	-37.22	439.34
Kunavaram	3790.17	0.00	478.67	2241.67	2720.34	-4.91	757.09
Manubothulapadu	6037.88	0.00	1200.92	4018.85	5219.77	0.00	741.90
Manuguru south	5127.41	0.00	849.00	1012.79	1861.79	-96.81	1029.86
Manuguru west	9228.75	0.00	54.15	1213.11	1267.26	0.00	1689.92
Musalimadugu	1658.99	0.00	232.39	1091.64	1324.03	0.00	303.63
Nellipaka	4881.95	0.00	276.96	1008.55	1285.51	-11.20	799.96
Sarapaka	8926.62	0.00	199.86	671.72	871.58	-66.34	1031.46
Sompalli	2639.53	0.00	0.00	17.12	17.12	0.00	147.65
Ulavanoor kothur	2998.10	0.00	926.65	1786.74	2713.39	-4.29	252.92
Total	63514.07	10.05	6582.24	17138.72	23731.01	-375.40	8752.72
BAYYARAM Range							
Anantharam	3674.33	1.07	52.96	397.87	451.90	0.00	585.47
Chirumalla	5135.67	0.00	958.41	2818.85	3777.26	-21.16	1180.90
Dugnepally	1421.39	0.00	142.06	161.83	303.89	-69.65	210.70
Gopalraopet	2356.47	4.75	502.95	878.08	1385.78	0.00	233.69



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Janampet	4027.22	0.00	655.01	798.90	1453.91	-82.26	527.02
Kalvalnagaram	5752.39	1.73	229.38	949.94	1181.05	-102.78	952.45
Karakagudem	2190.63	5.72	764.29	863.39	1633.40	-28.90	398.51
Kondaigudem	4195.45	0.00	153.71	1489.06	1642.77	-2.55	527.92
Pagaderu	2513.19	16.01	1429.14	962.46	2407.61	0.00	108.95
Pathareddipalem	4550.42	0.00	172.36	499.56	671.92	0.00	241.82
Potlapally	3742.54	3.62	285.64	412.70	701.96	0.00	128.81
Raghunathapalem	4277.99	0.00	270.52	2389.17	2659.69	0.00	1388.97
Seethampet	5403.06	0.00	947.43	1286.99	2234.42	-33.07	348.74
Total	49240.75	32.90	6563.86	13908.80	20505.56	-340.37	6833.95
KUKUNOOR Range							
Chigurumamidi	4043.49	82.90	1574.45	1322.61	2979.96	0.00	132.11
Gollagudem	3351.53	30.44	1080.57	648.61	1759.62	-4.39	94.95
Goparaju gudem	2674.16	0.00	106.57	563.02	669.59	-45.27	145.88
Gummadapally	7220.82	11.41	1661.73	1644.11	3317.25	-46.62	1074.19
Gundabore	2492.78	0.00	136.78	881.74	1018.52	-21.16	413.59
Kakeshnoor	3148.96	367.81	1396.62	807.61	2572.04	0.00	227.71
Kantlam	2083.71	356.22	1347.59	267.25	1971.06	0.00	91.68
Kavadigundla east	2899.58	571.26	1941.25	285.53	2798.04	0.00	29.11
Kavadigundla north	1853.39	10.21	981.57	300.73	1292.51	-31.32	161.68
Koida	4056.41	313.49	1690.91	648.89	2653.29	0.00	58.97
Kukunoor	4318.01	0.00	470.23	1200.33	1670.56	-70.04	205.23
Lankalapally	1474.18	0.00	167.88	618.06	785.94	-45.61	208.11
Nandipadu	3700.21	6.31	1904.10	1548.33	3458.74	-9.39	191.39
Pentapally	6559.30	1620.33	3617.93	1233.04	6471.30	0.00	97.71
Rudramkota	7131.20	0.00	21.68	416.15	437.83	0.00	239.52
Tekupally	3188.85	308.51	1917.59	753.55	2979.65	0.00	89.24
Total	60196.58	3678.89	20017.45	13139.56	36835.90	-273.80	3461.07
PALONCHA Range							
Bangarujal	1607.07	0.00	0.00	23.85	23.85	0.00	203.82
Dantalaboru	1846.36	0.00	0.00	607.06	607.06	0.00	420.33
Lingareddipalli	2512.03	0.00	105.03	1547.95	1652.98	-274.98	350.67
Madharam	2850.09	0.00	131.10	2220.34	2351.44	-152.85	414.11
Mulakalapally	5274.42	0.00	38.75	1422.91	1461.66	-409.72	696.80
Muthyalampadu	6366.29	0.00	940.31	1603.05	2543.36	-85.18	690.09
Nagaram	2117.61	0.00	0.00	6.96	6.96	0.00	200.75
Paloncha east	4549.78	0.00	85.09	1075.71	1160.80	-20.62	820.47
Pogadlapally	1973.92	0.00	16.18	295.79	311.97	-5.41	292.42
Suraram	5113.99	0.00	0.00	70.27	70.27	0.00	344.61
Uppusaka	6065.65	0.00	50.34	662.56	712.90	-13.46	1297.40
Vaddu ramavaram	2963.59	0.00	9.56	759.01	768.57	-111.30	542.08
Total	43240.80	0.00	1376.36	10295.46	11671.82	-1073.52	6273.55
Grand Total	253001.20	3877.23	41975.01	67141.46	112993.70	-2169.70	28343.05

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

23. Paloncha WLM Division

Khammam Circle

Introduction: Paloncha WLM Forest Division lies in the Central part of Khammam District, between latitudes 17° 35' 11" and 17° 59' 54" N and longitudes 80° 27' 14" and 80° 47' 20" E. The Geographical Area of the Division is 825 Km², which is 5.15 % of the geographical area of the District. The elevation varies from 12m to 600m above Mean Sea Level in this Division. Kinnerasani, Pamleru and Morredy are rivers of the Division.

Land use pattern of the Division is given in **Table 23.1**. The climate of this Division is generally cool fresh and pleasant ranging from 10°C to 49°C and the annual rainfall is about 1334 mm, received mainly from Southwest monsoons.

The Soil types found mainly in this Division are Red Sandy Loam, Red Loam, Black-cotton, Alluvium and Saline. The Rock formations found in this Division are Quartzite, Gneiss, Sandstone, Granite, Schist and Marble. The minerals found in this Division are Barytes, Graphite, Hematite (Iron ore) and soapstone.

Recorded Forest Area: The total notified forest area of the Division is 497.55 Km², which is 83.20% of the total geographical area.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical moist deciduous, Tropical Semi-evergreen, Dry Teak and Tropical Thorn Forest types.

Protected Area: Entire forest area of the Division is included in Kinnerasani WLS.

Community Forest Management: There are 50 Vana Samrakshana Samithies (VSSs) in the Division. 199.33 Km² forest area, which constitutes 29.04 % of forest area, is under the management of VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Oct 2008 - Dec 2008), is 497.55 Km², which is 60.31% of the total Geographical area. In terms of the forest canopy density classes, the Division has 1.43 Km² of Very Dense Forests, 221.33 Km² Moderately Dense Forests, and 274.79 Km² Open Forest. The area of the Scrub is 124.45 Km², Non-Forest 51.63 Km² and Water Bodies 12.75 Km². The distribution of the forest cover of the Division is shown in **Figure 23.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows:- 0.44 Km² in Very Dense Forest, 60.30 Km² Moderately Dense Forests, 77.85 Km² in Open Forests, The area of the Scrub is 40.74 Km², Non-Forest 17.87 Km² in and Water bodies 2.13 Km².

- **Comparison** of the current forest cover (Satellite data of Oct 2008 - Dec 2008) with that of previous assessment (Satellite data of Dec 2007), shows a net loss of 171.37 Ha forest cover during the period of one year.

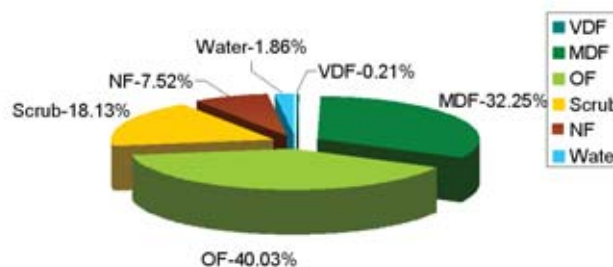
The forest cover change matrix, given in **Table 23.2** reveals that there has been a decrease of 0.29 Km² of moderately dense forest and 1.42 Km² of open forest.

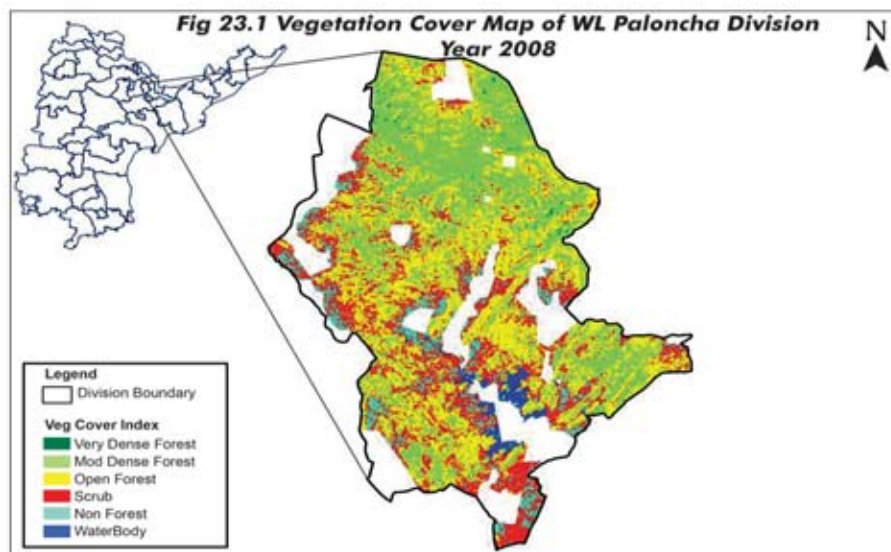
- The **simplified forest cover change matrix** is given in **Table 23.3**. and **Table 23.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in the forest cover is

Table 23.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	825	
Forest including Scrub	622.00	75.39
Agriculture	137.65	16.69
Land with Scrub	20.08	2.43
Fallow Lands	4.29	0.52
Grasslands	0.12	0.01
Settlements	0.38	0.05
Vegetation outside Forest	17.29	2.10
Water Bodies	23.19	2.81





due to encroachments and clearance for rising of plantations.

- There are **20 Beats** in the Division. Negative change in Forest Cover is seen in 9 Beats, and no change in 11 Beats.

- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 23.5**.

Table 23.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	1.43	0.00	0.00	0.00	0.00	0.00	1.43
Moderately Dense Forest	0.00	221.04	0.00	0.00	0.29	0.00	221.33
Open Forest	0.00	0.00	273.37	0.77	0.65	0.00	274.79
Scrub	0.00	0.00	0.00	124.45	0.00	0.00	124.45
Non-Forest	0.00	0.00	0.00	0.00	51.63	0.00	51.63
Water	0.00	0.00	0.00	0.00	0.00	12.75	12.75
Total of 2008	1.43	221.04	273.37	125.22	52.57	12.75	686.38
Net Change	0.00	-0.29	-1.42	0.77	0.94	0.00	0.00

Table 23.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	495.84	1.71	0.00	497.55
Degraded Forest	0.00	176.08	0.00	176.08
Water	0.00	0.00	12.75	12.75
Total of 2008	495.84	177.79	12.75	686.38
Net Change	-1.71	1.71	0.00	

Table 23.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

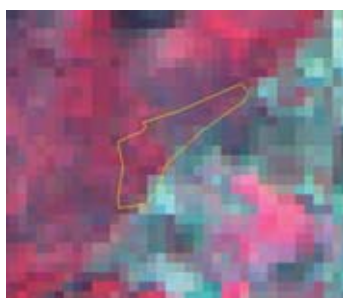
2007 (Data of Dec 2007)	2008 (Data of Oct 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	621.06	0.94	0.00	622.00
Barren	0.00	51.63	0.00	51.63
Water	0.00	0.00	3.51	12.75
Total of 2008	621.06	52.57	12.75	686.38
Net Change	-0.94	0.94	0.00	

Table 23.5: Beat wise Forest Cover (Area in Ha)

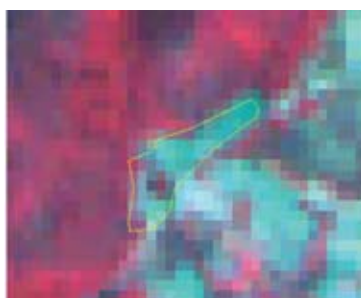
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHATAKONDA Range							
Allapally	6333.25	0.00	985.85	1625.95	2611.80	-18.70	1392.86
Chinthakunta	5586.98	0.00	499.74	2565.89	3065.63	0.00	1325.34
Gangaram	3498.62	0.67	470.18	847.91	1318.76	0.00	340.16
Gattumalla	4628.34	3.00	1116.61	1928.42	3048.03	0.00	940.81
Gollagudem	2341.95	0.00	197.55	866.75	1064.30	0.00	772.71
Kothasingaram	3975.16	2.46	2299.70	1365.27	3667.43	-24.26	175.84
Mailaram	2855.49	0.00	181.05	874.77	1055.82	0.00	821.02
Markode	7662.94	16.16	3089.62	1480.30	4586.08	0.00	678.68
Punukula chelaka	1418.84	0.00	137.18	739.88	877.06	-6.13	396.64
Regalla	2139.54	0.00	1.28	133.44	134.72	0.00	928.83
Venkatapuram	4574.78	0.00	1207.24	2243.98	3451.22	-1.60	668.28
Total	45015.89	22.29	10186.00	14672.56	24880.85	-50.69	8441.17
YANAMBAIL Range							
Bangaru chelaka	6125.64	0.00	417.52	2235.60	2653.12	-21.22	1057.71
Karegattu	4978.56	3.13	1438.24	1777.75	3219.12	-27.95	617.21
Mallaram	4179.29	1.06	794.40	1632.00	2427.46	0.00	644.83
Mamillavai	2768.19	2.18	1323.82	988.14	2314.14	-3.55	257.34
Pagidapur	4622.10	20.43	2517.07	1051.39	3588.89	0.00	116.86
Regalla	3794.80	33.77	1963.33	1523.13	3520.23	-32.89	222.57
Regulagudem	1942.16	8.60	940.69	878.24	1827.53	0.00	115.71
Ulvachelaka	4177.51	51.08	2176.10	1784.65	4011.83	0.00	141.58
Yanambail	4881.03	0.00	375.84	935.96	1311.80	-35.07	830.42
Total	37469.28	120.25	11947.01	12806.86	24874.12	-120.68	4004.23
Grand Total	82485.17	142.54	22133.01	27479.42	49754.97	-171.37	12445.40

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	80.70096
Latitude	17.71994
Area_Ha	3.67
Class	Open to NF
Comp_No	10
Beat	Karegattu
Range	Yanambail
Division	WLM Paloncha

24. Kadapa Division

Introduction: Kadapa Forest Division lies in the middle Part of Kadapa District, between latitudes 13° 50' 40" and 14° 40' 37" N and longitudes 78° 13' 9" and 79° 14' 39" E. The Geographical Area of the Division is 4521 Km², which is 29.44 % of the total area of the District. This Division lies on the Deccan Plateau. Altitude of North, East and Southeast region is less, while the southern and south-west region is a high plateau with 760 m altitude. The main rivers that flow through Kadapa division are Penna, Papaghni, and Mandavi.

Landuse pattern of the division is given in Table 24.1.

Table 24.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	4521	
Forest including Scrub	1625.45	35.95
Agriculture	1721.55	38.08
Land with Scrub	359.63	7.95
Fallow Lands	602.52	13.33
Grasslands	0.25	0.01
Settlements	19.64	0.43
Vegetation outside Forest	140.98	3.12
Water Bodies	50.97	1.13

The climate of this Division is generally dry with temperatures ranging from 21°C to 44°C and the annual rainfall is about 661.22mm.

The soil types found mainly are Red loamy soil, Black Cotton soil, Red sandy soil. The minerals resources in this division are granites, barites, asbestos and lime stone.

The total population of the Division is 0.858 million (2001 Census). The **Per capita forest area** is 0.22 ha. The population density is 190 persons per Km².

Recorded Forest Area: The **total notified forest area of the Division** is 1,928.69 Km², which is 25.63% of the total geographical area. Reserved and

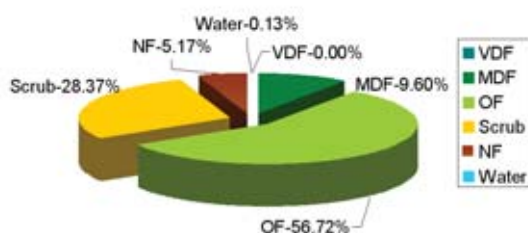
Protected Forests Constitute 1,914.08 Km² (99.24%) and 14.61 Km² (0.76%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Southern tropical dry deciduous, Southern tropical thorn mixed, Tropical dry ever green and Dry red sanders bearing forest types. Red Sanders (*Pterocarpus santalinus*), an endemic tree species is available in plenty in this area.

Protected Area: The Division is one of the two constituent Divisions of Sri Lankamalleswara Wildlife Sanctuary and also one of the four constituent Divisions of Sri Peninsula Narasimha WLS. Out of 1,716.54 Km² of notified forest area, 246.30 Km² is included in Sri Lankamalleswara WLS and 272.53 Km² is included in Sri Peninsula Narasimha WLS.

Community Forest Management: There are 118 JFPCs or **Vana Samrakshana Samithies** (VSSs) in the Division. 394.08 Km² forest area, which constitutes 22.96 % of forest area, is under the management of the VSSs.

Forest Cover: The **forest cover in the Division**, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 1138.42 Km², which is 25.18% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.03 Km² Very Dense Forest, 164.84 Km² Moderately Dense Forest, and 973.56 Km² Open Forest. The area of the Scrub is 486.41 Km², Non-Forest is 89.39 Km² and Water Bodies is 2.32 Km². the distribution of the forest cover of the division is shown in Figure 24.1.



- The **Forest Cover** in the CFM areas is 11.24 Km² in Moderately Dense Forest and 180.84 Km² in Open Forest. The area of the Scrub is 170.04 Km², Non-Forest is 31.75 Km² and Water bodies is 0.21 Km².

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008), shows a net loss of 6.07 Ha of forest cover during the period of one year. The change matrix,

given in **Table 24.2** reveals that there has been a decrease of 0.06Km² of open forest. • The **simplified forest cover change matrix** is given in **Table 24.3** and **Table 24.4**. • On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in the forest cover is due to clearance for rising of plantations.

• There are **44 beats** in the division. Negative change in forest cover is seen only in 2 beats, positive change only in 1 beat and no change in 41 beats. • Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 24.5**.

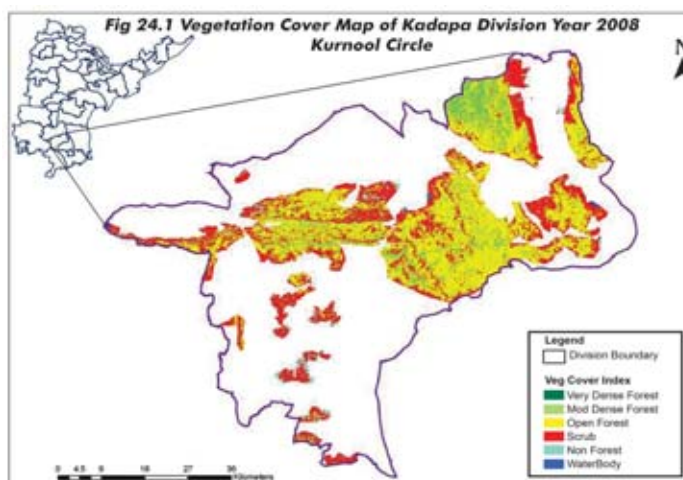


Table 24.2: Forest Cover change matrix (Area in Km²)

2007 (Data Nov 2007 - Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.03	0.00	0.00	0.00	0.00	0.00	0.03
Moderately Dense Forest	0.00	164.84	0.00	0.00	0.00	0.00	164.84
Open Forest	0.00	0.00	973.33	0.00	0.28	0.00	973.62
Scrub	0.00	0.00	0.11	486.27	0.59	0.00	486.97
Non-Forest	0.00	0.00	0.11	0.14	88.51	0.00	88.77
Water	0.00	0.00	0.00	0.00	0.00	2.32	2.32
Total of 2008	0.03	164.84	973.56	486.41	89.39	2.32	1716.54
Net Change	0.00	0.00	-0.06	-0.56	0.62	0.00	

Table 24.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data Nov 2007 - Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1138.42	0.06	0	1138.48
Degraded Forest		575.74	0	575.74
Water	0	0	2.32	2.32
Total of 2008	1138.42	575.80	2.32	1716.54
Net Change	-0.06	0.06	0	

Table 24.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data Nov 2007 - Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1624.83	0.62	0	1625.45
Barren		88.77	0	88.77
Water	0	0	2.32	2.32
Total of 2008	1624.83	89.39	2.32	1716.54
Net Change	-0.62	0.62	0	

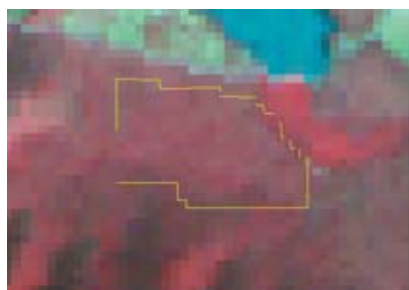
Table 24.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
KADAPA Range							
Bhakarapet	5952.63	0.00	247.30	2639.27	2886.57	0.00	132.38
Ippapenta	6873.94	0.00	227.92	3753.41	3981.33	0.00	1423.10
K.g.penta	2152.99	0.00	299.25	1756.12	2055.37	0.00	107.57
Kanumalopalli	12228.18	0.00	63.71	2292.47	2356.18	0.00	863.01
Maddimadgu_east	5905.05	0.00	203.11	3069.75	3272.86	0.00	1302.16
Maddimadgu_west	4919.78	0.00	252.15	2309.81	2561.96	0.00	1172.74
Mamillapalli	6788.91	0.00	144.74	1732.88	1877.62	12.76	1200.42
Rasulpally	9234.37	0.00	39.64	1019.67	1059.31	0.00	2109.21
Total	54055.86	0.00	1477.83	18573.37	20051.20	12.76	8310.59
RAYACHOTI Range							
Gadi_kota	6779.52	0.00	404.95	5549.03	5953.98	0.00	512.23
Guvvalacheruvu(E)	4101.30	0.00	686.96	2493.11	3180.07	0.00	546.43
Guvvalacheruvu (W)	15230.70	0.00	402.75	1521.21	1923.96	0.00	891.92
Kesapuram	9783.79	0.00	16.84	444.76	461.60	0.00	1428.07
Korthimadugu	9210.59	0.00	593.88	5461.45	6055.33	0.00	1203.82
Madhavaram	15394.87	0.00	0.00	23.76	23.76	0.00	1704.46
Nadimpalli	11377.11	0.00	679.24	3493.90	4173.14	0.00	1174.86
Pandillapalli	39293.28	1.28	16.42	912.80	930.50	0.00	2385.83
Saraswathipally	16902.26	0.00	753.74	3182.29	3936.03	0.00	1199.85
Surabhi	17100.78	0.00	23.68	959.74	983.42	0.00	1846.11
T.sakibanda	22772.86	0.00	12.54	175.95	188.49	0.00	674.67
Total	167947.04	1.28	3591.00	24217.99	27810.27	0.00	13568.25
SIDHOUT Range							
Gollapalli	5677.02	0.00	1785.58	2532.92	4318.50	0.00	311.23
Kondur	12349.12	0.00	1468.23	2073.74	3541.97	0.00	2332.26
Maddur	12077.34	0.00	1021.91	4314.97	5336.88	0.00	2646.44
Muthukur	9607.10	0.00	65.66	2027.10	2092.76	0.00	1643.91
Ponnapalli	10648.91	0.00	208.10	3680.75	3888.85	0.00	727.64
Rollabodu	2868.34	0.00	2112.58	749.20	2861.78	0.00	18.90
Sidhavatam	6383.41	0.00	1615.27	3152.39	4767.66	0.00	203.05
Total	59611.25	0.00	8277.33	18531.06	26808.39	0.00	7883.43
VEMPALLY Range							
Bonagundicheruvu	14034.37	0.00	27.51	2379.52	2407.03	0.00	1869.99
Chilekampalli	10368.33	0.00	317.12	1919.08	2236.20	0.00	1093.13
Gorlapalli	21056.56	0.00	11.79	1166.24	1178.03	0.00	1114.66
Idupulapaya	4609.96	0.00	264.23	2493.10	2757.33	0.00	803.43
Nandimandalam	9837.09	0.00	240.17	2562.38	2802.55	0.00	1270.36
Polathala	3763.38	0.00	201.99	2213.65	2415.64	0.00	901.99
Rachakuntapally	8841.23	0.00	0.00	526.94	526.94	0.00	1198.86
Vempally	12279.00	0.97	24.54	717.23	742.74	0.00	1691.79

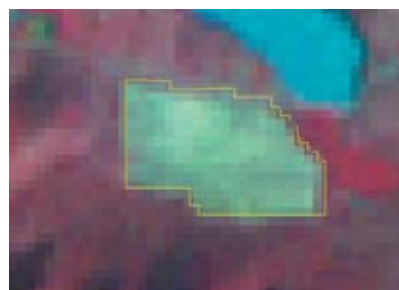
Yellatur	17424.99	0.00	446.67	3287.22	3733.89	0.00	677.81
Total	102214.91	0.97	1534.01	17265.36	18800.34	0.00	10622.01
VONTIMITTA Range							
Chintalakunta	8423.74	0.00	44.62	1178.87	1223.49	0.00	838.08
Chintarajupalli	5542.28	0.00	207.04	2158.98	2366.02	0.00	262.34
Dasarladoddi	5479.39	0.50	1018.09	4166.70	5185.29	0.00	275.51
Madhavaram	15394.87	0.00	59.18	1459.03	1518.21	0.00	1271.30
Mantapampalli	3679.75	0.00	4.30	1268.88	1273.18	0.00	978.61
Nadimpally	7475.03	0.00	16.86	1926.55	1943.41	-3.99	875.02
Nandalur	8707.75	0.00	42.80	1795.01	1837.81	-14.84	917.26
Patur	5573.05	0.00	205.98	2630.67	2836.65	0.00	931.33
Vontimitta	7995.10	0.00	4.62	2189.21	2193.83	0.00	1963.55
Total	68270.94	0.50	1603.49	18773.91	20377.90	-18.83	8312.99
Division total	452100.00	2.75	16483.66	97361.69	113848.10	-6.07	48697.26

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.15425
Latitude	14.31085
Area	14.8 ha.
Change	Kanuga Plantation
	2008-2009
Compartment No.	468
Beat	Nandalur
Range	Vontimitta
Division	Kadapa



Sri Kodanda Rama Swamy Temple, Vontimitta

25. Kurnool Division

Introduction: Kurnool Forest Division lies in the Western Part of Kurnool District, between latitudes 14° 56'49.56" and 15° 57'49.68"N and longitudes 76° 58'26.04" and 78° 29'22.56"E. The Geographical Area of the Division is 12,904 Km², which is 73.07 % of the total area of the District. The Kurnool Division formation consists of shales, Limestone, and quartzite and its distribution continued to western portion of Nallamalais. The average elevation in the division varies from 305 to 579.5 mts above MSL. The elevation of Kurnool town is about 288 Mts above MSL. The River Thungabhadra—a Tributary of River Krishna forms Northern boundary of the Division.

Table 25.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	12904	
Forest including Scrub	634.11	4.92
Agriculture	10048.40	77.84
Land with Scrub	705.85	5.47
Fallow Lands	1031.6	7.99
Grasslands	83.82	0.65
Settlements	113.53	0.88
Vegetation outside Forest	71.55	0.55
Water bodies	215.14	1.67

Landuse pattern of the Division is given in **Table 25.1.**

The climate of this Division is inland tropical monsoonic type with three distinct seasons. Temperatures ranging from 12° C to 45°C and the average annual rainfall in the division are about 523.24 mm.

Important minerals and rocks found in the division are Limestone, iron, red and yellow ochre's, Barytes, Diamond, Black and pink Granite. The soil types found mainly are black cotton, Red and saline soils.

The **population of the Division** is 2.704 million (2001 Census), which consists of 1.376 million males and 1.328

million females, which constitutes 76.62% of the total population of the District. The per capita forest area is 0.045 ha. The Population density is 210 persons per Km².

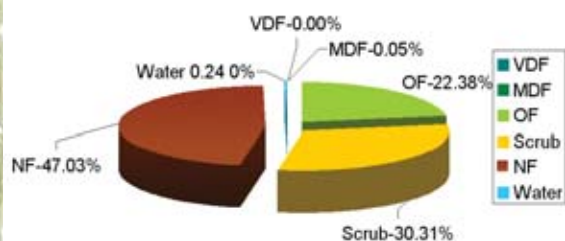
Recorded Forest Area: The total notified forest area of the Division is 1202.55 Km², which is 9.58 % of the total geographical area. Reserved, Protected and Unclassed Forests Constitute 1154.45 Km² (96%), 37.17 Km² (3.09%) and 10.93 Km² (0.91%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, and Tropical Thorn Forest types.

Protected Area: No Protected Area is there in the Division.

Community Forest Management: There are 149 **Vana Samrakshana Samities** (VSSs) in the Division. 392.62 Km² forest area, which constitutes 32.65 % of forest area, is under CFM.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008- Dec 2008), is 269.65 Km², which is 2.15 % of the total Geographical area. In terms of the forest canopy cover density classes, the Division has 0.56 Km² Moderately Dense Forest, and 269.09 Km² Open Forest. The area of the Scrub is 364.46 Km², Non-Forests 565.55 Km² and Water Bodies 2.89 Km². The distribution of the forest cover of the division is shown in **Figure 25.1.**



- The **distribution of the Forest Cover** in the CFM areas is as follows- 0.02 Km² in Moderately Dense Forests, 111.00 Km² in Open Forests. The area of the Scrub is 138.82 Km², Non-Forest 142.52 Km² and Water bodies 0.27 Km².

- **Comparison** of the current forest cover (Satellite data of Nov 2008- Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008) shows that there is no change between the one year.

- The forest cover change matrix are given in **Table 25.2.**

The simplified forest cover change matrices are given in **Table 25.3** and **Table 25.4**.

• Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 25.5**.

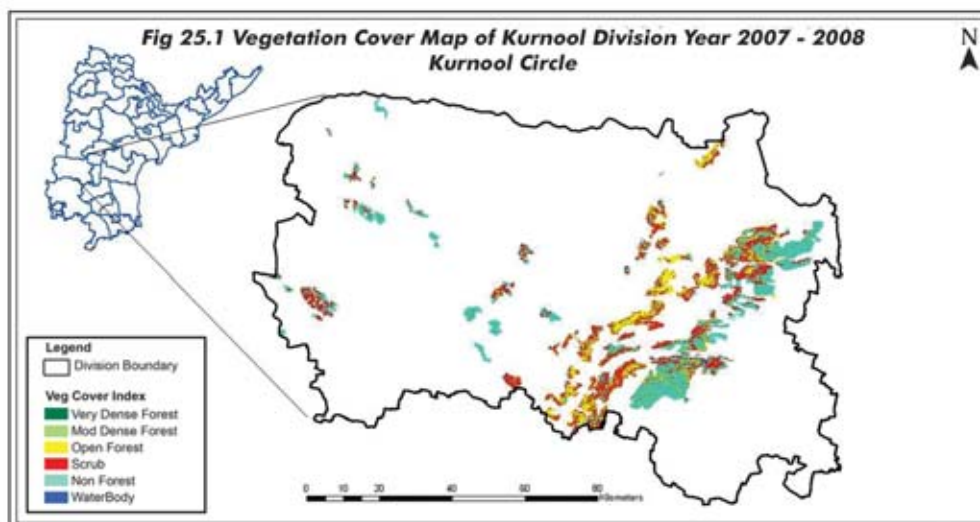


Table 25.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 - Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	0.56	0.00	0.00	0.00	0.00	0.56
Open Forest	0.00	0.00	269.09	0.00	0.00	0.00	269.09
Scrub	0.00	0.00	0.00	364.46	0.00	0.00	364.46
Non-Forest	0.00	0.00	0.00	0.00	565.55	0.00	565.55
Water	0.00	0.00	0.00	0.00	0.00	2.89	2.89
Total of 2008	0.00	0.56	269.09	364.46	565.55	2.89	1202.55
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	

Table 25.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 - Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	269.65	0	0	269.65
Degraded Forest	0	930.01	0	930.01
Water	0	0	2.89	2.89
Total of 2008	269.65	930.01	2.89	1202.55
Net Change	0.00	0.00	0.00	

Table 25.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 - Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	634.11	0	0	634.11
Barren	0	565.55	0	565.55
Water	0	0	2.89	2.89
Total of 2008	634.11	565.55	2.89	1205.55
Net Change	0.00	0.00	0.00	

Table 25.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ADONI Range							
Gulyam	49629.40	0.00	16.51	56.11	72.62	0.00	139.30
Gundlakonda	72975.02	0.00	0.00	283.44	283.44	0.00	1261.90
Isvi	45974.71	0.00	0.00	30.08	30.08	0.00	523.25
Jonnagiri	17360.50	0.00	0.00	288.96	288.96	0.00	927.12
Kotekallu	90490.31	0.00	0.00	5.43	5.43	0.00	170.85
Kuppagallu	65417.29	0.00	3.43	94.99	98.42	0.00	450.23
Narineki_east	71930.47	0.00	0.00	37.99	37.99	0.00	859.73
Narineki_west	22942.45	0.00	0.00	127.07	127.07	0.00	1098.25
Pattikonda	39587.64	0.00	0.00	0.00	0.00	0.00	46.04
Tuggali	24062.76	0.00	0.00	1.12	1.12	0.00	40.62
Tungabadra	55667.74	0.00	0.00	8.73	8.73	0.00	59.46
Total	556038.27	0.00	19.94	933.92	953.86	0.00	5576.75
DHONE Range							
Aliabad	17576.97	0.00	0.00	418.18	418.18	0.00	372.11
Chintalapeta	6474.48	0.00	0.00	1324.29	1324.29	0.00	1320.12
Dhone	10670.27	0.00	1.65	2219.65	2221.30	0.00	764.42
Erragudi	17351.88	0.00	0.04	162.65	162.69	0.00	210.22
Gulmaliabad	45574.74	0.00	2.01	350.19	352.20	0.00	2006.09
Jaladurgam	9622.41	0.00	0.00	2013.36	2013.36	0.00	2376.95
Madhavaram	5789.47	0.00	0.00	280.39	280.39	0.00	1023.80
Malkapuram	15044.21	0.00	0.00	1329.35	1329.35	0.00	1579.02
Malyala	27242.44	0.00	0.00	294.65	294.65	0.00	736.40
Narayanapuram	5296.85	0.00	0.00	686.18	686.18	0.00	529.79
Ouk	127818.47	0.00	14.36	956.56	970.92	0.00	1509.49
Peapully	19730.05	0.00	0.00	1626.06	1626.06	0.00	1213.23
Peddapaya	6306.62	0.00	0.00	1313.47	1313.47	0.00	1238.35
Racherla	8012.90	0.00	2.84	1515.76	1518.60	0.00	1725.23
Rangapuram	10591.14	0.00	0.00	350.71	350.71	0.00	1011.78
Total	333102.90	0.00	20.90	14841.45	14862.35	0.00	17617.00
KURNOOL Range							
Bethamcherla	14393.30	0.00	1.70	2090.84	2092.54	0.00	2001.68
Bugganipalli	3344.77	0.00	0.00	24.63	24.63	0.00	768.40
Gani	12226.10	0.00	0.00	885.15	885.15	0.00	1382.71
Gargayapuram	33035.48	0.00	2.30	1262.27	1264.57	0.00	776.78
Gorukal	18599.05	0.00	4.26	99.08	103.34	0.00	135.58
Konidedu	12904.54	0.00	1.91	881.75	883.66	0.00	2428.70
Lanjabanda	8979.11	0.00	0.00	2125.36	2125.36	0.00	638.20
Panyam	16435.93	0.00	1.45	71.37	72.82	0.00	381.54
Ramallakota	54011.98	0.00	1.37	955.60	956.97	0.00	674.82
Ramatheertham	11929.79	0.00	0.00	76.96	76.96	0.00	754.35
Somayajulapalli	4985.34	0.00	0.00	590.37	590.37	0.00	639.22
Thammarajupalli	7177.73	0.00	1.37	727.98	729.35	0.00	751.21
Veldurthi	49019.20	0.00	0.00	43.91	43.91	0.00	97.44
Yaparlapadu	119300.48	0.00	0.31	1298.72	1299.03	0.00	1822.62
Total	366342.82	0.00	14.67	11133.99	11148.66	0.00	13253.25
Division total	1255484.00	0.00	55.51	26909.36	26964.87	0.00	36447.00

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

26. Nandyal Division

Kurnool Circle

Introduction: Nandyal Forest Division lies in the South Eastern Part of Kurnool District, between latitudes 14° 53'58.56" and 15° 40'58.08" N and longitudes 78° 20'27.6" and 78° 46'40.08" E. The Geographical Area of the Division is 2,600.00 Km², which is 14.73 % of the geographical area of the District. The Nandyal Division formation consists of Purple shaley lime stone shaley flags Gray lime stone and flags. The Maximum elevation in the division is 908.68 mts above MSL. Important Rivers in this division are Kundu River, Gundlakamma River.

Land use pattern of the Division is given in **Table 26.1**.

The climate of this Division is generally dry and enervating with temperatures ranging from 10° C to 46°C and the average annual rainfall is about 914 mm, received mainly from South-west monsoons.

The soil types found mainly are Black, Alluvial soils, Brown loamy soils, and Red soils.

The **population of the Division** is 0.548 million (2001 Census), which consists of 0.278 million males and 0.270 million females, which constitutes 15.56% of the total population of the District. The per capita forest area is 0.194 ha. The Population density is 211 persons per Km².

Table 26.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2600.00	
Forest including Scrub	999.59	38.45
Agriculture	1498.64	57.63
Land with Scrub	48.75	1.87
Fallow Lands	7.41	0.29
Grasslands	0.00	0.00
Settlements	11.86	0.46
Vegetation outside Forest	14.21	0.55
Water bodies	19.54	0.75

Recorded Forest Area: The total notified forest area of the Division is 1,066.46 Km², which is 41.02 % of the total geographical area. The total forest area is Reserved Forest.

As per Champion and Seth's classification, the forests of Division fall under Tropical Dry Deciduous, Tropical Moist Deciduous and Tropical Thorn Forest types.

Protected Area: The Division is one of the two constituent Divisions of Gundla Brahmeswaram (GBM) Wildlife Sanctuary. Out of 1,066.46 Km² of notified forest area, 371.81 Km² is included in the GBM WLS.

Community Forest Management: There are 51 **Forest Protection Committees (FPCs)** or **Vana Samrakshana Samities (VSSs)** in the Division. An area of 166.84 Km² forests, which is 15.64 % of the notified forests, is under the management of the VSSs.

Forest Cover: The **forest cover in the Division** based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 928.50 Km², which is 35.71 % of the total Geographical area. In terms of the forest canopy density classes the Division has 40.71 Km² of Very Dense Forests, 596.10 Km² of Moderately Dense Forest and 291.69 Km² of Open Forest. The area of the Scrub is 68.24 Km², Non-Forest 66.29 Km² and Water Bodies 3.43 Km². The distribution of the forest cover of the division is shown in **Figure 26.1**.

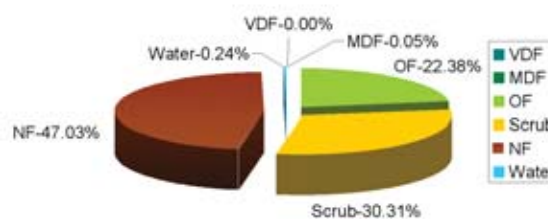
- The **distribution of Forest Cover** in the CFM areas is as follows- 1.29 Km² in Very Dense Forests, 63.23 Km² in Moderately Dense Forests, 52.33 Km² in Open Forest, 20.41 Km² in Scrub, 28.62 Km² in Non-Forest and 0.96 Km² in Water bodies.

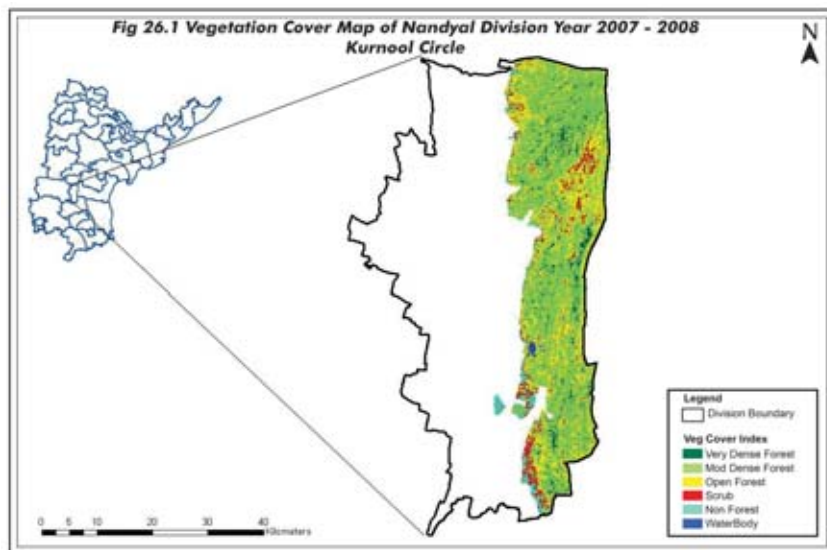
- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Jan 2008) shows a Net loss of 284.50 Ha of forest cover during the period of one year.

- The **forest cover change matrix**, given in **Table 26.2** reveals that there has been a decrease of 2.09 Km² of moderately dense forest and 0.76 Km² of open forest.

- The simplified forest cover change matrices are given in **Table 26.3** and **Table 26.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main





reasons for decrease in the forest cover is due to encroachments.

- There are **29 Beats** in the division. There are no changes in Forest Cover in 23 Beats and Negative change in 6 Beats.
- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 26.5**.

Table 26.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	40.71	0.00	0.00	0.00	0.00	0.00	40.71
Moderately Dense Forest	0.00	596.10	0.00	0.00	2.09	0.00	598.19
Open Forest	0.00	0.00	291.69	0.00	0.76	0.00	292.45
Scrub	0.00	0.00	0.00	68.24	0.00	0.00	68.24
Non-Forest	0.00	0.00	0.00	0.00	63.44	0.00	63.44
Water	0.00	0.00	0.00	0.00	0.00	3.43	3.43
Total of 2008	40.71	596.10	291.69	68.24	66.29	3.43	1066.46
Net Change	0.00	-2.09	-0.76	0.00	2.85	0.00	

Table 26.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	928.50	2.85	0	931.35
Degraded Forest	0	131.68	0	131.68
Water	0	0	3.43	3.43
Total of 2008	928.50	134.53	3.43	1066.46
Net Change	-2.85	2.85	0	

Table 26.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	996.74	2.85	0	999.59
Barren	0	63.44	0	63.44
Water	0	0	3.43	3.43
Total of 2008	996.74	66.29	3.43	1066.46
Net Change	-2.85	2.85	0.00	

Table 26.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BANDI ATMAKUR Range							
G.C.palem	7761.00	39.86	2,210.00	1,432.59	3,682.45	0.00	310.23
Honkaram (N)	5560.00	107.71	1,489.35	666.44	2,263.50	0.00	75.05
Honkaram (S)	8137.00	77.82	1,302.35	448.52	1,828.69	0.00	107.88
Narapureddy_kunta(N)	5548.00	2.84	1,465.33	1,026.66	2,494.83	0.00	180.26
Narapureddy_kunta(S)	5605.00	5.10	1,142.48	646.44	1,794.02	0.00	100.46
Total	32611.00	233.33	7609.51	4220.65	12063.49	0.00	773.88
CHELAMA Range							
Basavapuram	7068.00	101.04	2,716.42	1,557.02	4,374.48	-79.00	292.27
Chelama	4192.00	1.18	1,471.13	2,362.40	3,834.71	0.00	399.17
Dongabhavi	2155.00	3.66	820.42	946.93	1,771.01	0.00	337.53
Kotakonda	27703.00	214.82	2,518.97	1,073.62	3,807.41	0.00	257.01
Pacherla	4396.00	510.64	2,545.21	1,232.00	4,287.85	0.00	182.28
Peddakambalur	14989.00	213.31	3,236.72	859.49	4,309.52	-33.50	88.05
Total	60503.00	1044.65	13308.87	8031.46	22384.98	-112.50	1556.31
GUNDLA_BRAHMESWARAM Range							
Ramanapenta(E)	3887.00	141.52	3,403.64	406.52	3,951.68	0.00	5.96
Ramanapenta(W)	3989.00	153.26	3,309.90	591.22	4,054.38	0.00	30.12
Total	7876.00	294.78	6713.54	997.74	8006.06	0.00	36.08
NANDYAL Range							
Baireni	5962.00	57.59	2,361.32	2,648.06	5,066.97	0.00	892.64
Gadigundaram	3314.00	560.83	2,554.18	249.24	3,364.25	0.00	29.63
Palardam	2584.00	164.30	2,052.27	357.45	2,574.02	0.00	52.37
Prema	17703.00	92.74	2,051.54	911.37	3,055.65	-44.00	196.82
Thimmapuram	20626.00	70.19	1,615.75	473.87	2,159.81	0.00	93.88
Total	50189.00	945.65	10635.06	4639.99	16220.70	-44.00	1265.34
RUDRAVARAM Range							
Ahobilam_north	3559.00	192.62	2,183.49	969.65	3,345.76	-10.00	111.78
Ahobilam_south	3106.00	157.69	2,131.07	603.67	2,892.43	0.00	63.36
Bachepalli	2082.00	41.02	1,436.99	604.87	2,082.88	0.00	49.24
D.V.penta	19840.00	412.78	2,962.84	2,109.72	5,485.34	0.00	792.62
Madambhavi	10120.00	70.74	2,464.60	1,757.93	4,293.27	0.00	340.42
Mittapalli	16970.00	1.63	647.97	601.19	1,250.79	-62.00	635.47
Nuthala (N)	13249.00	25.15	1,110.47	895.98	2,031.60	0.00	179.32
Nuthala (S)	2519.00	82.26	1,680.50	730.46	2,493.22	0.00	59.11
Peddavangli	15224.00	219.35	1,662.43	979.93	2,861.71	0.00	740.03
Rudravaram	20258.00	308.52	4,079.02	1,468.23	5,855.77	-56.00	148.30
Utlala	1894.00	40.92	1,192.54	633.77	1,867.23	0.00	72.38
Total	108821.00	1552.68	21551.92	11355.40	34460.00	-128.00	3192.03
Division total	260000.00	4071.09	59818.90	29245.24	93135.23	-284.50	6823.64

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



27. Proddutur Division

Introduction: Proddutur Forest Division lies in the Northern Part of Kadapa District, between latitudes 14° 19' 37" and 15° 13' 43" N and longitudes 77° 56' 43" and 79° 17' 38" E. The Geographical Area of the Division is 7,524 Km², which is 48.99 % of the Geographical area of the District. The main rivers that flow through the Division are Penna, Chitravathi, Kunderu, Papaghni, Sagileru and Mogamneru.

Land use pattern of the Division is given in Table 27.1.

Table 27.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	7524	
Forest including Scrub	1285.95	17.09
Agriculture	4343.95	57.73
Land with Scrub	500.77	6.66
Fallow Lands	1101.21	14.64
Grasslands	1.56	0.02
Settlements	31.78	0.42
Vegetation outside Forest	115.58	1.54
Water Bodies	143.20	1.90

The climate of this Division is generally dry with temperatures ranging from 21°C to 44°C and the annual rainfall is about 661.22mm, received mainly from Southwest monsoons.

The soil types found mainly are Red loamy soil, Black Cotton soil, Red sandy soil. The important minerals available are granites, barites, asbestos and lime stone.

The total population of the Division is 1.278 million (2001 Census). The Per capita forest area is 0.13 ha. The population density is 170 persons per Km². The Literacy rate in the district is 70%.

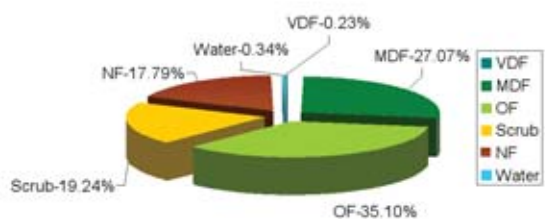
Recorded Forest Area: The total notified forest area of the Division is 1,663.35 Km², which is 39.13% of the total geographical area. Reserved and Protected Forests Constitute 1,549.48 Km² (93.15%) and 114.07 Km² (6.86%) of the total forest area, respectively.

As per Champion and Seth's classification the Forests of Division fall under Southern tropical dry deciduous, Southern tropical thorn mixed, Tropical dry ever green and Dry red sanders bearing forest types. Red Sanders (*Pterocarpus santalinus*), a highly endemic tree species, is found in plenty in this Division.

Protected Area: The Division is one of the two constituent Divisions of Sri Lankamalleswara Wildlife Sanctuary. Out of 1,575.11 Km² of notified forest area, 218.12 Km² is included in Sri Lankamalleswara WLS. This Division is also one of the four constituent Divisions of Sri Peninsula Narasimha WLS. Out of 1,575.11 Km² of forest area, 133.74 Km² is included in Sri Peninsula Narasimha WLS. Rajiv Gandhi National Park is also located in this Division. It covers an area of 3.82 Km².

Community Forest Management: There are 128 JFPCs or Vana Samrakshana Samities (VSSs) in the Division. An area of 456.38 Km² forest area, which is 28.97% of the notified forest area, is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 982.81 Km², which is 13.06% of the total Geographical area. In terms of the forest canopy density classes the Division has 3.58 Km² of Very Dense Forest, 426.38 Km² of Moderately Dense Forest and 552.85 Km² of Open Forest. The area of the Scrub is 302.70 Km², Non-Forest 280.65 Km² and Water Bodies 8.95 Km². The



distribution of the forest cover of the division is shown in Figure 27.1.

• The distribution of the Forest Cover in the CFM areas is as follows: 0.01 Km² in Very Dense Forest, 46.02 Km² in Moderately Dense Forest and 148.83 Km² in Open Forest. The area of the Scrub is 154.34 Km², Non-Forest is 105.41 Km² and Water bodies is 1.77 Km².

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of the previous assessment (Satellite Imagery of Nov 2007 - Jan 2008) shows a net loss of forest cover of 4.34 Ha during last one year.

- The **change matrix**, given in **Table 27.2** reveals that there has been a decrease of 0.01 Km² of moderately dense forest and 0.03 Km² of open forest.

- The simplified forest cover change matrix is given in **Table 27.3** and **Table 27.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in the forest cover is due to encroachments.

- There are **45 beats** in the division. Negative change in forest cover is seen in only 2 beats and no change in 43 beats. • Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 27.5**.

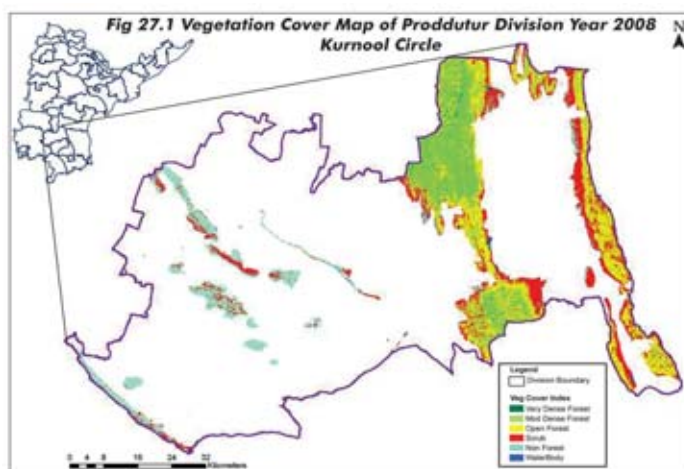


Table 27.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	3.58	0.00	0.00	0.00	0.00	0.00	3.58
Moderately Dense Forest	0.00	426.38	0.00	0.01	0.00	0.00	426.39
Open Forest	0.00	0.00	552.85	0.00	0.00	0.03	552.88
Scrub	0.00	0.00	0.00	302.60	0.50	0.00	303.10
Non-Forest	0.00	0.00	0.00	0.09	280.15	0.00	280.24
Water	0.00	0.00	0.00	0.00	0.00	8.92	8.92
Total of 2008	3.58	426.38	552.85	302.70	280.65	8.95	1575.11
Net Change	0.00	-0.01	-0.03	-0.40	0.41	0.03	

Table 27.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	982.81	0.01	0.03	982.85
Degraded Forest		583.34	0	583.34
Water	0	0	8.92	8.92
Total of 2008	982.81	583.35	8.95	1575.11
Net Change	-0.04	0.01	0.03	

Table 27.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1285.51	0.41	0.03	1285.95
Barren		280.24	0	280.24
Water	0	0	8.92	8.92
Total of 2008	1285.51	280.65	8.95	1575.11
Net Change	-0.44	0.41	0.03	

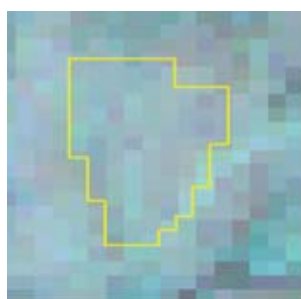
Table 27.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BADVEL Range							
Balayapalli	8537.42	1.18	1550.71	2159.78	3711.67	0.00	1129.07
Boyanapalli	14170.24	0.00	121.43	2816.53	2937.96	0.00	1534.63
Brahmanapalli	7106.39	0.00	185.12	2269.93	2455.05	0.00	1322.84
Gangireddipalli	11089.42	0.00	308.84	1354.88	1663.72	0.00	369.47
Ganugapenta	12437.8	0.00	209.75	2668.85	2878.60	0.00	1624.64
Jangamrajupalli	16680.14	0.00	18.07	1536.22	1554.29	0.00	652.07
Lothuvanka	10631.93	0.67	1416.59	2585.70	4002.96	0.00	1496.84
Obulam	13040.43	0.00	434.20	3984.24	4418.44	0.00	1353.83
Ramapuram	6661.68	0.00	15.57	1432.21	1447.78	0.00	1290.00
Valleruvaripalli	13350.61	0.00	85.97	2741.52	2827.49	0.00	2000.48
Total	113706.07	1.85	4346.25	23549.86	27897.96	0.00	12773.88
MUDDANUR Range							
Bhanukotamala	26584.33	0.00	0.00	65.73	65.73	0.00	735.19
Dhodium	37437.14	0.00	0.00	2.34	2.34	0.00	471.63
Dorigallu_east	29847.22	0.00	5.20	43.28	48.48	0.00	725.55
Dorigallu_west	29078.56	0.00	8.65	14.18	22.83	0.00	108.58
Gundlur	47775.28	0.00	0.00	6.28	6.28	0.00	515.09
Kalamala	59887.93	0.00	0.00	13.00	13.00	0.00	372.26
Mallela	58934.93	0.00	0.00	0.00	0.00	0.00	32.77
Mangapatnam	19053.74	0.00	0.00	34.81	34.81	0.00	289.47
Settivaripalli	60581.11	0.00	0.00	48.06	48.06	0.00	1286.91
Venkayakalva	13279.09	0.00	0.00	4.58	4.58	0.00	33.92
Total	382459.34	0.00	13.86	232.27	246.13	0.00	4571.37
ONIPENTA Range							
Gangayapalli	8516.17	0.00	137.12	910.09	1047.21	0.00	418.87
Ganjikunta	17068.02	5.21	1168.48	676.20	1849.89	0.00	487.31
Kothapalli	11270.27	6.06	2195.04	1377.53	3578.63	0.00	283.37
Maddivaripalli	5611.51	0.00	317.65	1844.78	2162.43	0.00	414.87
Mudireddipally	5413.23	4.43	2744.92	1575.88	4325.23	0.00	100.73
Neelapuram	15981.54	23.65	1570.41	977.11	2571.17	0.00	864.11
Thippireddipally	5091.54	16.21	4138.49	694.03	4848.73	0.00	36.39
Total	68952.28	55.55	12272.10	8055.62	20383.27	0.00	2605.65
PORUMAMILLA Range							
Balayapalli	8537.42	79.83	2396.78	2006.00	4482.61	0.00	1326.32
Itukalapadu	21735.26	21.96	3595.61	1237.82	4855.39	0.00	11.86
Jyothi	8922.13	82.20	3933.73	1235.10	5251.03	-1.20	57.28
Kalasapadu	8239.68	0.00	397.14	1263.59	1660.73	0.00	697.30
Mallepalli	17516.56	3.30	3650.97	1274.27	4928.54	0.00	247.58
Mamillapalli	6193.91	0.00	435.05	1870.73	2305.78	-3.14	745.24
Peddabhavi	7396.42	16.35	1863.01	2460.82	4340.18	0.00	588.34
Siddavaram	8493.27	0.00	156.29	1301.18	1457.47	0.00	1657.91

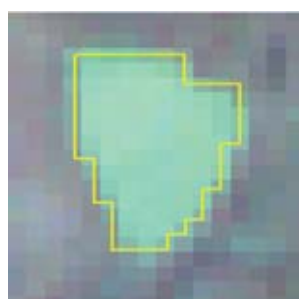
Tekurupet	9316.01	0.00	274.13	1392.35	1666.48	0.00	1150.59
Thaduku	5918.44	87.53	4020.27	1554.86	5662.66	0.00	21.63
Venkatapuram	8826.66	0.00	427.38	2032.81	2460.19	0.00	1298.24
Total	111095.76	291.16	21150.36	17629.54	39071.06	-4.34	7802.27
PRODDATUR Range							
Balasinganapally	4661.62	0.00	1091.77	1845.33	2937.10	0.00	376.71
Byanapalli	7075.68	0.00	711.44	897.86	1609.30	0.00	415.47
Jandlavaram	3059.71	6.99	1625.17	945.73	2577.89	0.00	197.93
Kamalapuram	19886.26	0.00	0.00	13.84	13.84	0.00	49.99
Nagasanipalli	8791.88	1.02	641.07	777.03	1419.12	0.00	455.88
Pattur	10458.66	1.44	772.15	1267.99	2041.58	0.00	670.27
Proddatur	22252.74	0.00	14.69	73.37	88.06	0.00	390.57
Total	76186.55	9.46	4856.29	5821.14	10686.89	0.00	2556.81
Division total	752400	358.02	42638.86	55288.43	98285.31	-4.34	30309.98

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.05134
Latitude	15.01778
Area	5.11 ha.
Class	Scrub to NF
Compartment No.	248
Beat	Tekurupet
Range	Porumamilla
Division	Proddatur



28. Kamareddy Division

Introduction: Kamareddy Forest Division lies in the south eastern Part of Nizamabad District, between latitudes 18° 3' 34" and 18° 42' 11" N and longitudes 77° 53' 45" and 78° 34' 17" E. The Geographical Area of the Division is 2,732 Km², which is 34.04% of the geographical area of the District. This Division lies on the Deccan plateau. Manjira River flowing from Medak District enters Kamareddy Division at Nizamsagar Reservoir and flows in Northerly direction to join Godavari river at the North-west corner of the district. Kappalavagu and peddavagu are other two strems. The Rivers and streams of the district form part of the Godavari basin. The altitude varies between 335 meters to 490 meters above MSL. The highest peak is 635m above MSL situated in Gandhari Block.

Table 28.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2732	
Forest including Scrub	903.57	33.01
Agriculture	1613.07	58.94
Land with Scrub	84.61	3.09
Fallow Lands	22.45	0.82
Grasslands	0.00	0.00
Settlements	3.00	0.11
Vegetation outside Forest	32.42	1.18
Water Bodies	77.88	2.85

Land use pattern of the division is given in **Table 28.1**. The climate of this Division is generally dry with temperatures ranging from 13°C to 47°C. The north and northwestern regions of the Division receive above 1000 mm. of rainfall while North Eastern, south Eastern and southern regions of the division receive less than 900 mm of rainfall from Southwest monsoons. The soil types found mainly are Black cotton soil and Sandy loam. The economic minerals known from this Division

are the building material clay, iron-ore, manganese ore, mica, semi-precious stones, talc and soap-stones. The **total population of the Division** is 0.93million (2001 Census). The Per capita forest area is 0.10 ha. The population density is 340 persons per Km².

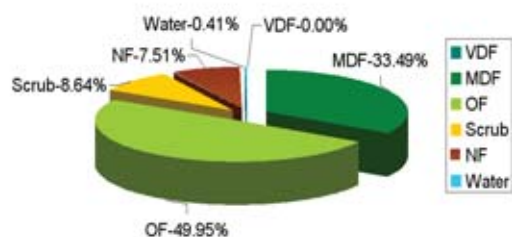
Recorded Forest Area: The **total notified forest area of the Division** is 940 Km², which is 34.34% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 598.56 Km² (63.71%), 252 Km² (26.84%) and 88.84 Km² (9.45%) of the total forest area respectively.

As per Champion and Seth's classification the Forests of Division fall under Tropical dry deciduous forests.

Protected Area: Out of 940 Km² of notified forest area 86.76 Km² area is included in Pocharam WLS.

Community Forest Management: There are 112 **Vana Samrakshana Samities (VSSs)** in the Division. An area of 325.66 Km², which is 33.19% of the notified forest area and 19.91Km² is plantation area, is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008) is 817.99 Km², which is 29.94% of the total Geographical area. In terms of the forest canopy density classes the Division has 328.05 Km² of Moderately Dense Forests and 489.94 Km² of Open Forests. The area of the Scrub is 85.17 Km², Non-Forest 74.13 Km² and Water Bodies 4.00 Km².



• The **distribution of the forest cover** of the division is shown in **Figure 28.1**.

• The **distribution of the Forest Cover** in the CFM areas is as follows 83.59 Km² in Moderately Dense Forests and 177.44 Km² in Open Forests, Scrub is 34.96 Km², 28.38 Km² is Non-Forests and 1.28 Km² Water bodies.

• **Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008), shows a net loss

of 80.21 Ha forest cover during the period of one year.

- The **change matrix**, given in **Table 28.2** reveals that there has been a decrease of 0.54 Km² of moderately dense forest and 0.26 Km² of open forest.

- The simplified forest cover change matrix is given in **Table 28.3** and **Table 28.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments.

- There are **66 beats** in the division. Negative

change in forest cover is seen in 6 beats, positive change in 1 beat and no change in 59 beats. • Beat wise forest cover in 2008, in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 28.5**.

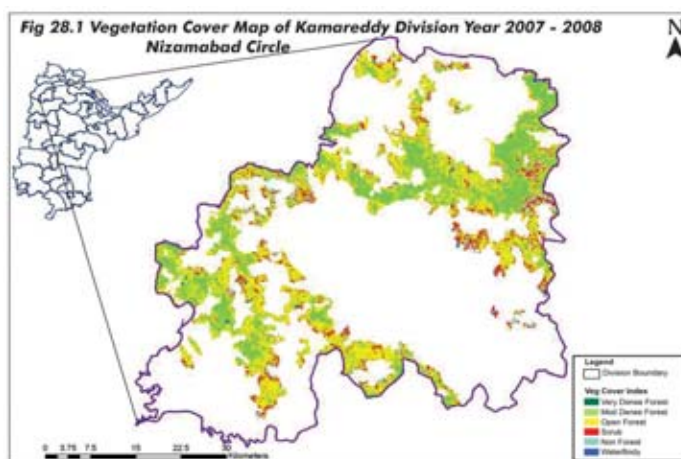


Table 28.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	328.05	0.08	0.38	0.09	0.00	328.59
Open Forest	0.00	0.00	489.84	0.14	0.21	0.00	490.20
Scrub	0.00	0.00	0.00	84.65	0.14	0.00	84.78
Non-Forest	0.00	0.00	0.02	0.00	73.69	0.00	73.71
Water	0.00	0.00	0.00	0.00	0.00	4.00	4.00
Total of 2008	0.00	328.05	489.94	85.17	74.13	4.00	981.29
Net Change	0.00	-0.54	-0.26	0.39	0.42	0.00	

Table 28.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	817.99	0.80	0	818.79
Degraded Forest	0	158.49	0	158.49
Water	0	0	4.00	4.00
Total of 2008	817.99	159.30	4.00	981.29
Net Change	-0.8	0.8	0	

Table 28.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	903.15	0.42	0.00	903.57
Barren	0.00	73.71	0.00	73.71
Water	0.00	0.00	4.00	4.00
Total of 2008	903.15	74.13	4.00	981.29
Net Change	-0.42	0.42	0.00	

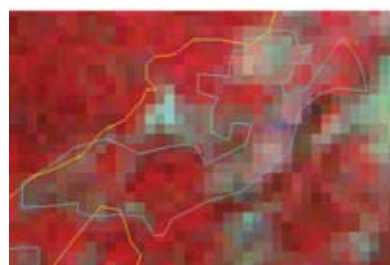
Table 28.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
GANDHARI Range							
Bhanapur	3403.06	0.00	111.96	968.71	1080.67	0.00	125.85
Chedmal	4159.23	0.00	399.36	1114.42	1513.78	0.00	310.61
Gandhari	2720.18	0.00	74.43	387.86	462.29	0.00	157.63
Gandivate	3598.70	0.00	743.87	1551.23	2295.10	0.00	158.60
Gowraram(g)	3200.63	0.00	914.91	595.84	1510.75	0.00	45.21
Gurjal	5839.93	0.00	14.37	689.84	704.21	0.00	167.24
Kondapur	809.32	0.00	49.52	393.04	442.56	0.00	64.16
Mombajipet	1348.53	0.00	276.03	601.89	877.92	0.00	137.08
Mudhelly	1923.07	0.00	868.90	661.96	1530.86	0.00	30.22
Nagloor	2565.39	0.00	439.32	806.46	1245.78	0.00	191.74
Pothangal	4002.04	0.00	725.10	1060.52	1785.62	0.00	153.65
Singitham	2545.68	0.00	961.18	949.04	1910.22	0.00	43.75
Uthnoor	4744.25	0.00	55.26	260.17	315.43	0.00	134.65
Vellutla	2977.16	0.00	1253.88	975.98	2229.86	0.00	60.51
Yacharam	1947.61	0.00	383.44	677.76	1061.20	0.00	201.26
Total	45784.80	0.00	7271.51	11694.69	18966.20	0.00	1982.16
INDALWAI Range							
Amsanpally	5529.84	0.00	397.44	1165.38	1562.82	-6.86	202.42
Dharpally	2157.26	0.00	193.72	505.40	699.12	0.00	84.43
Dubbak	10094.30	0.00	276.29	1124.13	1400.42	0.00	308.89
Gannaram	3493.66	0.00	476.27	823.02	1299.29	0.00	84.15
Gowraram	3224.90	0.00	433.97	1002.88	1436.85	0.00	100.63
Indalwai	5920.04	0.00	871.08	1004.61	1875.69	0.00	122.99
Kalwaral	2090.66	0.00	653.72	318.47	972.19	0.00	26.21
Koratpally	3904.61	0.00	116.71	981.94	1098.65	0.00	227.97
Navanandi	3137.33	0.00	796.87	322.00	1118.87	0.00	24.83
Pipri	2450.86	0.00	651.45	135.26	786.71	-3.81	15.29
Ravutla	2498.47	0.00	1337.95	333.65	1671.60	2.03	28.45
Sadasivnagar	4006.79	0.00	545.54	387.46	933.00	0.00	24.70
Sirikonda	3048.23	0.00	1072.90	294.96	1367.86	0.00	10.93
Sirnapally	2918.72	0.00	722.64	525.52	1248.16	0.00	61.70
Triyambakpet	1247.44	0.00	469.69	528.14	997.83	0.00	13.55
Yanampally	4753.07	0.00	298.99	776.78	1075.77	0.00	61.38
Total	60476.20	0.00	9315.25	10229.59	19544.84	-8.64	1398.50
KAMAREDDY Range							
Akkapuram	872.59	0.00	82.72	455.53	538.25	0.00	112.63
Annaram	6019.17	0.00	763.06	1308.63	2071.69	0.00	548.52
Bhiknoor	16530.79	0.00	554.66	772.62	1327.28	0.00	141.37
Donkal	2541.19	0.00	1551.31	732.53	2283.84	0.00	10.15
EsaiPET	22360.84	0.00	60.46	938.66	999.12	0.00	439.15
Gadkole	4310.70	0.00	477.14	967.19	1444.33	-5.40	62.06

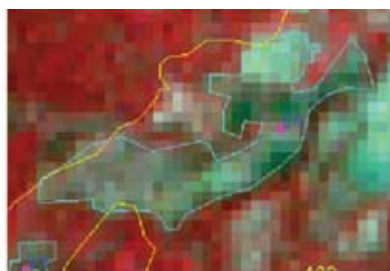
Ghanpur	3681.39	0.00	332.09	939.24	1271.33	0.00	299.33
Ghanpur beroon	5860.50	0.00	31.19	670.96	702.15	0.00	530.10
Gidda	15563.22	0.00	902.43	692.56	1594.99	0.00	15.53
Honnajipet	4023.47	0.00	538.77	685.11	1223.88	0.00	43.08
Kotalpally	1341.48	0.00	521.49	695.79	1217.28	0.00	45.90
Machareddy	1649.86	0.00	60.40	371.15	431.55	0.00	56.88
Maddikunta	2693.72	0.00	483.25	913.88	1397.13	0.00	189.47
Pakhal (north)	2161.92	0.00	1179.35	953.73	2133.08	-18.88	181.32
Pakhal south	1468.60	0.00	602.93	519.14	1122.07	-25.52	235.70
Pandimadugu	1614.01	0.00	424.36	263.57	687.93	0.00	14.24
Peddaipally	7615.73	0.00	272.46	491.17	763.63	0.00	83.87
Posanipet beroon	3320.13	0.00	1.87	83.18	85.05	0.00	36.86
Reddypet	1889.69	0.00	591.41	852.95	1444.36	0.00	78.77
Toompally	3493.65	0.00	2195.29	953.19	3148.48	-21.77	147.55
Total	109012.67	0.00	11626.63	14260.78	25887.41	-71.57	3272.47
YELLAREDDY Range							
Bhavanipet	1905.23	0.00	725.65	658.03	1383.68	0.00	40.87
Bollaram	3728.91	0.00	103.24	1100.45	1203.69	0.00	259.09
Gundaram	2725.87	0.00	357.28	1135.38	1492.66	0.00	184.65
Hasanpally	14641.40	0.00	107.64	537.47	645.11	0.00	84.67
Jaldepally	1460.16	0.00	232.16	556.74	788.90	0.00	9.41
Komatpally	2948.88	0.00	138.62	765.61	904.23	0.00	114.29
Kondapur	809.32	0.00	419.65	2119.07	2538.72	0.00	297.91
Laxmapur	3677.20	0.00	994.25	827.50	1821.75	0.00	52.52
Mengaram	1846.12	0.00	387.60	641.70	1029.30	0.00	25.70
Mothe	2123.27	0.00	103.07	1092.05	1195.12	0.00	153.45
Mustapur	1992.97	0.00	441.85	476.22	918.07	0.00	62.31
Nagireddypet	12411.72	0.00	142.77	1127.08	1269.85	0.00	253.30
Potaipally	1633.23	0.00	154.36	850.30	1004.66	0.00	158.27
Shetpally	1962.70	0.00	235.00	674.81	909.81	0.00	88.20
Yerrapahad	4559.36	0.00	102.66	272.17	374.83	0.00	40.47
Total	58426.33	0.00	4645.81	12834.56	17480.37	0.00	1825.10
Division total	273700.00	0.00	32859.19	49019.62	81878.81	-80.21	8478.23

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	78.52063
Latitude	18.52927
Area	14.017
Class	Open to Scrub
Compartment No.	448
Beat	Pakhal(North)
Range	Kamareddy
Division	Kamareddy

29. Medak Division

Introduction: Medak is located in the North West Part of Andhra Pradesh State, between latitudes 17° 25' 36" and 18° 17' 7" N and longitudes 77° 26' 43" and 79° 7' 37" E. The Geographical Area of the Division is 9699Km². District forms a part of the table land of Deccan plateau and is crisscrossed by different ranges of hills. The ground is mostly flat and undulating with gentle slope. The elevation of ground varies from 500m–600m with occasional hills up to 638m above mean sea level. Medak falls under semiarid region of peninsular India.

Table 29.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	9699.00	
Forest including Scrub	923.13	9.52
Agriculture	7591.99	78.28
Land with Scrub	561.88	5.79
Fallow Lands	11.42	0.12
Settlements	50.71	0.52
Vegetation outside forest	293.88	3.03
Waterbody	265.99	2.74

Land use pattern of the Division is given in **Table 29.1**.

The climate of this Division is generally dry with temperatures ranging from 6° C to 46°C and the annual rainfall is about 700 mm, receiving mainly from Southwest monsoons.

Red earths comprising loamy sands, sandy loams and sandy clay loams; Ragar, or Black cotton soil comprising clay loams, clay and silt clay are present.

Manjeera River which is a tributary of Godavari River is the main source of water supply. Haldivagu or Pasupuvagu tributary of Manjeera and Kudlair tributary of Manair River are also water sources in the district and all these remains

dry in the summer.

The **total population** of the Division is 2.6million (2001 Census). The Per capita forest area is 0.03ha. The population density is 275 persons per Km².

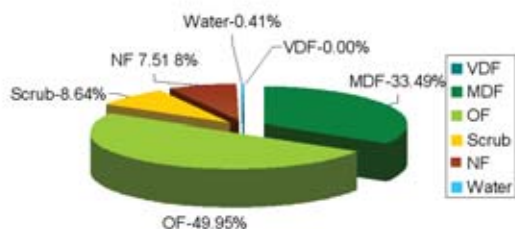
Recorded Forest Area: The **total notified forest area of the Division** is 905.94 Km², which is 9.96% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 634.22 Km² (70%), 255.63 Km² (28.2%) and 16.09 Km² (0.018%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous and Tropical Thorn Forest types.

Protected Area: Out of 905.94 Km² of notified forest area 55.47 Km² area is included in Pocharam WLS.

Community Forest Management: There are 251 **Vana Samrakshana Samities (VSSs)** in the Division. An area of 678.04 Km² forests, which is 75% of notified forest area is under the management of VSSs. During JFM/CFM project around 45 Km² areas is brought under Plantations.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 632.85 km², which is 6.5% of the total Geographical area. In terms of the forest canopy density classes, the Division does not have Very Dense Forest cover, 112.92 Km² of Moderately Dense Forests, 521.21 Km² of Open Forests. The area of the Scrub is 288.99 Km², Non-Forests 37.27 Km² and Water Bodies 2.70 Km². The distribution of the forest cover of the division is shown in **Figure 29.1**.



• The **distribution of Forest Cover** in the JFM/CFM areas is as follows:- 120.10 Km² in Moderately Dense Forests, 1,045.44 Km² in Open Forests. The area of the Scrub is 380.46 Km², 24.66 Km² is Non-Forest and 2.46 Km² Water bodies. • **Comparison** of the current forest cover 2008 (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment of 2007 (Satellite Imagery of Nov 2007 to Jan 2008) shows a net loss of 127.94 Ha of forest cover during

the period of one year. • The **change matrix**, given in **Table 29.2** reveals that there has been an increase of 0.21 Km² of moderately dense forest. • The **simplified forest cover change matrix**, is given in **Table 29.3** and **Table 29.4**

• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations.

• There are **95 beats** in the Division.

Negative change in forest cover is seen in 8 beats, positive change in 3 beats and no change in 84 beats.

• Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 29.5**.

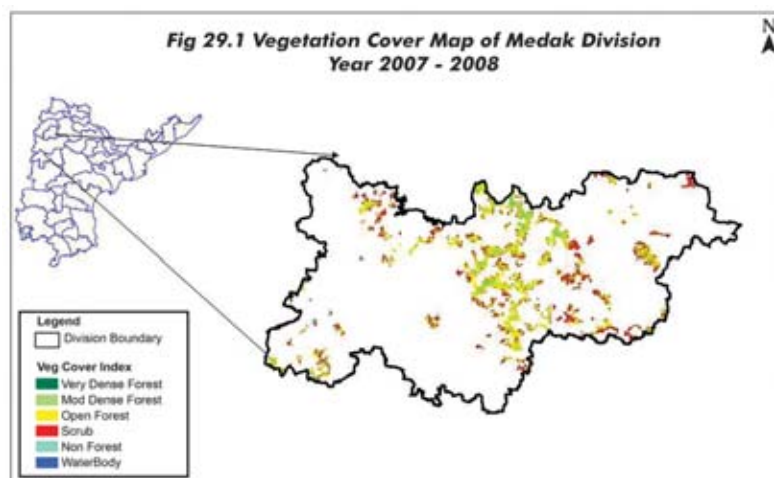


Table 29.2: Forest Cover change matrix

(Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	112.93	0.00	0.00	0.00	0.00	112.93
Open Forest	0.00	0.21	519.27	0.37	1.33	0.00	521.21
Scrub	0.00	0.00	0.43	288.41	0.10	0.00	288.99
Non-Forest	0.00	0.00	0.00	0.00	37.27	0.00	37.27
Water	0.00	0.00	0.00	0.00	0.00	2.70	2.70
Total of 2008	0.00	113.14	519.71	288.79	38.75	2.70	963.11
Net Change		0.21	-1.50	-0.20	1.48	0.00	

Table 29.3: Forest Cover change matrix (Good and Degraded Forest)

(Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	632.85	1.28	0	634.13
Degraded Forest	0	326.26	0	326.26
Water	0	0	2.70	2.70
Total of 2008	632.85	327.54	2.70	963.10
Net change	-1.28	1.28	2.70	

Table 29.4: Forest Cover change matrix (Rejuvenation and Barren)

(Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	921.64	1.48	0	923.12
Barren	0	37.26	0	37.26
Water	0	0	2.70	2.70
Total of 2008	921.64	38.75	2.70	963.10
Net Change	-0.19	0.19	0	

Table 29.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
MEDAK Range							
Amsanpally	6566.02	0.00	458.15	945.28	1,403.43	0.00	173.86
Andugulapally	1008.28	0.00	20.25	491.00	511.25	0.00	76.85
Annaram	9564.42	0.00	118.36	815.57	933.92	0.00	257.74
Arkela	5108.02	0.00	1.22	240.98	242.20	0.00	468.78
Bhootpur	6494.79	0.00	243.46	865.77	1,109.23	0.00	208.92
Bujrapet	7579.03	0.00	140.12	365.51	505.63	0.00	308.24
Damarancha	2436.78	0.00	17.93	552.04	569.98	-2.20	396.85
Kulcharam	3611.81	0.00	282.52	533.90	816.42	0.00	187.51
Manepally	1824.59	0.00	250.18	803.35	1,053.53	0.00	49.57
Mangalparthy	2388.83	0.00	178.95	979.96	1,158.91	0.00	300.84
Nagsanpally	6374.28	0.00	88.49	721.58	810.07	0.00	335.19
Rampur	3197.17	0.00	111.75	906.26	1,018.01	0.00	342.93
S.kondapur	3875.82	0.00	135.04	891.68	1,026.72	0.00	239.12
Shetpally	5903.99	0.00	141.93	1,268.71	1,410.64	-26.83	601.85
Tekmal	16225.75	0.00	9.23	656.57	665.79	0.00	206.30
Wariguntham	1507.00	0.00	81.78	329.93	411.71	0.00	92.48
Yeldurthy	8601.20	0.00	317.30	1,403.44	1,720.73	0.00	317.51
Total	92267.79	0.00	2,596.65	12,771.52	15,368.17	-29.03	4,564.54
NARAYANKHED Range							
Alladurgu	7931.84	0.00	23.92	263.54	287.47	0.00	26.73
Bachepally	1868.06	0.00	0.00	22.62	22.62	0.00	232.13
Bibipet	12341.02	0.00	0.46	75.77	76.23	15.03	454.67
Kadpal	2802.87	0.00	69.69	379.40	449.09	0.00	56.26
Madhwar	5613.50	0.00	0.67	432.93	433.61	0.00	603.16
Nagadhar	2595.92	0.00	50.04	768.73	818.78	1.33	319.59
Narayanakhed	39189.09	0.00	0.61	218.32	218.93	0.00	166.96
Nizampet	4597.30	0.00	0.00	186.37	186.37	0.00	470.87
Raikode	41067.13	0.00	17.14	346.75	363.90	0.00	335.67
Raparthi	3095.75	0.00	0.00	69.91	69.91	0.00	195.78
Sanjeevanraopet	3382.59	0.00	16.63	333.43	350.06	0.00	100.29
Shankarampet_a	13504.86	0.00	14.13	314.34	328.47	0.00	135.00
Tedkal	17029.27	0.00	0.00	4.51	4.51	0.00	29.76
Total	155019.21	0.00	193.30	3,416.64	3,609.94	16.36	3,126.86
NARSAPUR Range							
Brahmanpally	1327.33	0.00	46.86	367.51	414.37	0.00	51.86
Chippelthurthy	2952.25	0.00	0.00	267.23	267.23	0.00	262.38
Choutkoor	140347.51	0.00	3.02	759.40	762.42	0.00	544.80
Gummadidalla	3967.24	0.00	23.94	866.32	890.26	0.00	181.27
Ibrahimbad	4033.22	0.00	67.49	514.54	582.03	0.00	293.88
Kanukunta	2665.45	0.00	39.21	246.33	285.54	0.00	37.74
Khazipally	18303.32	0.00	0.00	76.99	76.99	0.00	437.24

Kowdipally	2649.99	0.00	59.31	731.84	791.15	0.00	245.66
Mangapet	4901.03	0.00	82.61	753.93	836.54	0.00	252.39
Mohammadnagar	2671.01	0.00	583.30	547.97	1,131.27	-13.74	57.29
Nagsanpally	1918.98	0.00	54.13	508.98	563.12	0.00	58.11
Nallavally	4317.95	0.00	6.54	696.07	702.61	0.00	258.18
Narayanapoor	3157.48	0.00	3.10	292.02	295.12	0.00	266.93
Narsapur	11653.72	0.00	31.62	929.52	961.13	0.00	262.16
Nathinaipally	8336.07	0.00	6.30	344.58	350.88	0.00	375.39
Pilluta	2800.07	0.00	28.34	374.45	402.78	0.00	126.05
Ratnapur	2031.86	0.00	135.17	1,089.59	1,224.76	0.00	172.38
Salabathpoor	2469.49	0.00	148.26	231.50	379.75	0.00	25.03
Shivampet	9815.24	0.00	198.13	1,158.99	1,357.12	0.00	277.83
Sirpura	9138.73	0.00	11.35	137.74	149.10	0.00	40.12
Somakapet	3290.11	0.00	9.68	343.11	352.79	0.00	255.15
Tirumalpur	3848.93	0.00	0.50	349.77	350.27	0.00	436.14
Wailal	9308.55	0.00	74.25	516.94	591.19	-5.15	317.88
Total	255905.54	0.00	1,613.10	12,105.32	13,718.42	-18.89	5,235.84
POCHARAM Range							
Burugupally	2607.45	0.00	551.39	578.39	1,129.78	0.00	74.17
Parvathapoor	2666.79	0.00	956.47	370.58	1,327.05	0.00	168.60
Rajpet	3795.71	0.00	548.14	1,218.77	1,766.91	0.00	115.05
Total	9069.95	0.00	2,056.00	2,167.74	4,223.74	0.00	357.82
RAMAYAMPET Range							
Akkannapet	2136.35	0.00	408.99	310.50	719.49	0.00	61.24
Baithole	3642.16	0.00	84.90	270.22	355.12	0.00	135.13
Datharpally	11452.52	0.00	0.56	545.85	546.42	0.00	815.38
Dongal dharmaram	2181.39	0.00	286.00	192.46	478.46	0.00	9.95
Gangapoor	3521.70	0.00	954.82	640.91	1,595.74	0.00	127.77
Ibrahimipur	6141.68	0.00	251.29	756.09	1,007.37	0.00	85.69
Jansilingapur	3434.85	0.00	482.25	695.51	1,177.77	0.00	86.64
Manoharabad	9897.21	0.00	72.10	619.79	691.88	0.00	450.81
Narsingi	5208.75	0.00	341.77	860.47	1,202.24	0.00	288.72
Pathur	2095.18	0.00	166.66	289.37	456.03	0.00	113.51
Ramayampet	13992.59	0.00	48.69	305.28	353.97	0.00	119.34
Rampur	5965.80	0.00	71.87	549.91	621.77	0.00	899.07
Shankarampet	5659.35	0.00	45.35	571.65	617.00	0.00	74.09
T. Mohamadapur	6037.56	0.00	383.16	922.47	1,305.63	0.00	226.43
Vallure	3078.48	0.00	140.69	499.40	640.10	0.00	94.46
Waddiaram	2643.17	0.00	17.66	369.26	386.93	0.00	197.12
Total	87088.75	0.00	3,756.76	8,399.14	12,155.91	0.00	3,785.35
SIDDIPET Range							
Chilasagar	4198.53	0.00	9.40	330.03	339.43	23.79	470.00
Damarkunta	10525.08	0.00	0.55	94.23	94.79	0.00	788.98
Dommat	15925.20	0.00	0.00	86.72	86.72	0.00	378.26
Dubbak	9444.40	0.00	5.48	624.15	629.63	0.00	327.16



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Gajwel	21839.84	0.00	1.79	791.91	793.70	-46.86	638.92
Gambhirpoor	8949.26	0.00	0.55	232.89	233.44	0.00	278.17
Godgupally	5597.01	0.00	0.00	221.34	221.34	0.00	298.98
Induperial	10671.77	0.00	1.79	823.68	825.47	0.00	1,211.02
Jagdevpur	17197.93	0.00	0.00	780.99	780.99	0.00	360.71
Kondapak	6925.32	0.00	0.56	892.51	893.07	-21.04	388.69
Marpadga	26170.96	0.00	4.50	921.28	925.79	0.00	923.28
Meenajipet	14532.24	0.00	1.79	883.03	884.81	-2.06	1,087.25
Mirdoddi	15995.62	0.00	6.92	397.83	404.75	0.00	151.80
Mulug	9242.18	0.00	9.61	932.58	942.19	-50.21	560.94
Siddipet	60700.72	0.00	10.90	353.87	364.77	0.00	993.71
Vemulghat	18077.15	0.00	0.00	1,395.10	1,395.10	0.00	725.13
Total	255993.21	0.00	53.83	9,762.14	9,815.98	-96.38	9,582.99

ZAHEERABAD Range

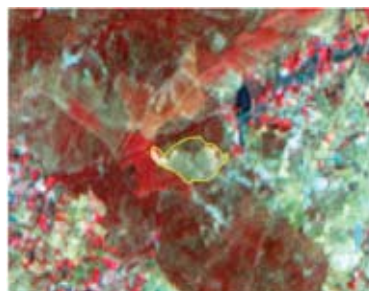
Didgi	5178.42	0.00	2.96	18.68	21.64	0.00	127.25
Gudgarpally	7507.60	0.00	398.05	705.63	1,103.68	0.00	232.46
Gudupally	11785.98	0.00	460.92	949.73	1,410.65	0.00	231.83
Husselli	23446.02	0.00	15.32	286.19	301.51	0.00	328.73
Pichargad	38523.25	0.00	59.81	643.36	703.17	0.00	615.76
Sajjapur	7900.79	0.00	23.36	547.45	570.81	0.00	403.10
Zaheerabad	20213.68	0.00	69.38	352.48	421.86	0.00	297.55
Total	114555.75	0.00	1,029.79	3,503.52	4,533.31	0.00	2,236.69
Division total	969900.20	0.00	11,299.44	52,126.02	63,425.45	-127.94	28,890.09

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	78.65528
Latitude	17.81451
Area	14 Ha.
Change	OF TO NF
Compartment No.	263
Beat	Gajwel
Range	Siddipet
Division	Medak

30. Nizamabad Division

Nizamabad Circle

Introduction: Nizamabad Forest Division lies in the North Western Part of Nizamabad District, between latitudes 18° 10' 10" and 19° 00' 55" N and longitudes 77° 31' 17" and 78° 40' 17" E. The Geographical Area of the Division is 5,219 Km², which is 65.59 % of the total area of the District. This region lies on Deccan Plateau. Godavari enters Andhra Pradesh at Kandhakurthi in Nizamabad Division. Manjira river which flows through thick forests of Nizamabad and Kamareddy divisions towards Northwest direction joins Godavari at Kandhakurthi.

Land use pattern of the Division is given in **Table 30.1**

The climate of this Division is generally dry with temperatures ranging from 13°C to 47°C and the annual rainfall is about 1033.7mm, received mainly from Southwest monsoons.

Red soils are extensive followed by Black soils in Nizamabad Division. Alluvial and Laterite soils are found occasionally and small in extent. Along the banks of Godavari and other big streams soil is loamy or alluvial and more fertile, hence support better forests. Most of the soils have Morrum underneath at different depths, which support some of the good Teak Forests in the division.

Verities of colored granites and the Deccan trap rocks and different types of economic minerals are available in this division.

The total population of the Division is 1.4million (2001 Census). The Per capita forest area is 0.06ha. The population density is 268 persons per Km².

Recorded Forest Area: The **total notified forest area of the Division** is 872 Km², which is 16.7% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 530.36 Km² (60.84%), 319 Km² (36.61%) and 22.26 Km² (2.5%) of the total forest area respectively.

As per Champion and Seth's classification, the forests of Division fall under Tropical dry deciduous.

Protected Area: There are no Protected areas in the Division

Community Forest Management: There are 148 **Vana Samrakshana Samities (VSSs)** in the Division. An area of 423.48Km² forests, which is 48.56% of forest area, is under the management of the VSSs.

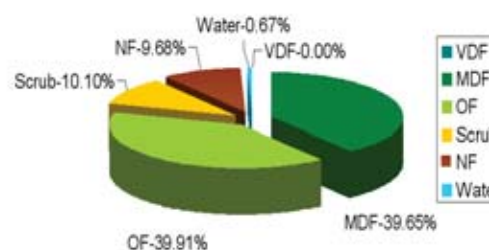
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008) is 624.32 Km², which is 11.96% of the total Geographical area. In terms of the forest canopy density classes the Division has 311.23 Km² of Moderately Dense Forests and 313.09 Km² of Open Forests. The area of the Scrub is 80.19 Km², Non-Forests 77.30 Km² and Water Bodies 5.32 Km². The distribution of the forest cover of the division is shown in **Figure 30.1**.

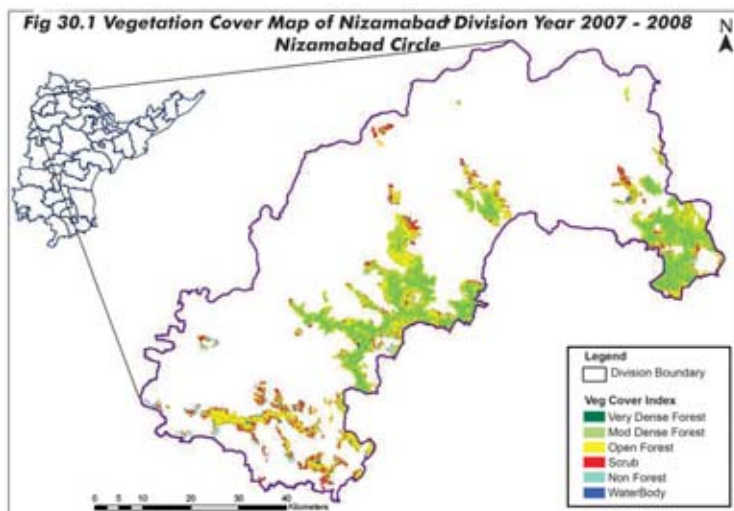
- The **distribution of Forest Cover** in the JFM/CFM areas is as follows:- 131.47Km² in Moderately Dense Forests, 184.33 Km² in Open Forests, Scrub is 46.49 Km², 40.54 Km² is Non-Forests and 2.54 Km² Water bodies.

- **Comparison** of the current forest cover of the year 2008(Satellite data of Nov 2008 - Dec 2008) with that of previous assessment year 2007 (Satellite Imagery of Oct 2007 - Nov 2007), shows a net loss of 192.3 Ha of forest cover during the period of one year.

Table 30.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	5219	
Forest including Scrub	705.71	13.52
Agriculture	3809.14	72.99
Land with Scrub	192.54	3.69
Fallow Lands	31.84	0.61
Grasslands	0.00	0.00
Settlements	31.74	0.61
Vegetation outside Forest	45.00	0.86
Water Bodies	402.76	7.72





• The **change matrix**, given in **Table 30.2** reveals that there has been a decrease of 0.85 Km² of moderately dense forest and 1.07 Km² of open forest.

The simplified forest cover change matrix is given in **Table 30.3** and **Table 30.4**.

• On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in the forest cover is due to encroachments.

• There are **55 beats** in the Division. Negative change in forest cover is seen in 12 beats and no change in 43 beats. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the

changes compared to 2007 assessment, is given in **Table 30.5**.

Table 30.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	311.23	0.09	0.47	0.29	0.00	312.08
Open Forest	0.00	0.00	312.99	0.34	0.76	0.07	314.16
Scrub	0.00	0.00	0.00	79.34	0.12	0.00	79.46
Non-Forest	0.00	0.00	0.00	0.04	76.13	0.00	76.18
Water	0.00	0.00	0.00	0.00	0.00	5.25	5.25
Total of 2008	0.00	311.23	313.09	80.19	77.30	5.32	787.13
Net Change	0.00	-0.85	-1.07	0.72	1.13	0.07	

Table 30.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	624.32	1.92	0.00	626.24
Degraded Forest	0.00	155.57	0.07	155.64
Water	0.00	0.00	5.25	5.25
Total of 2008	624.32	157.49	5.32	787.13
Net Change	-1.92	1.85	0.07	

Table 30.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007 – Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	704.51	1.2	0.00	705.71
Barren	0.00	76.11	0.07	76.18
Water	0.00	0.00	5.25	5.25
Total of 2008	704.51	77.30	5.32	787.13
Net Change	-1.20	1.13	0.07	

Table 30.5: Beat wise Forest Cover (Area in Ha)

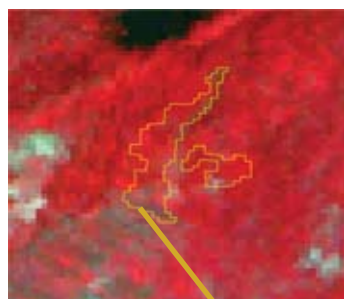
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BANSWADA Range							
Akbarnagar	24636.83	0.00	59.22	77.01	136.23	0.00	8.78
Banswada	4721.77	0.00	182.76	381.58	564.34	0.00	83.88
Bommandevpally	3707.89	0.00	1155.10	640.49	1795.59	0.00	80.79
Chandur	5631.05	0.00	294.24	518.21	812.45	-6.42	103.90
Chillargi	6208.22	0.00	20.99	1001.84	1022.83	0.00	500.55
Dhadgi	6245.86	0.00	0.00	484.59	484.59	0.00	498.16
Hajipur	2080.63	0.00	441.43	184.53	625.96	0.00	27.25
Ibrahimpet	6201.23	0.00	793.14	373.92	1167.06	0.00	33.39
Jalalpur(w)	3776.13	0.00	878.77	402.38	1281.15	0.00	36.67
Jallapur(e)	1282.13	0.00	397.78	522.40	920.18	0.00	78.82
Jallapur(s)	2494.76	0.00	48.13	399.66	447.79	0.00	128.91
Jukkal	5586.03	0.00	0.85	51.50	52.35	0.00	130.76
Kodapgal kalan	10895.11	0.00	2.38	74.54	76.92	0.00	238.44
Kowlas	9008.81	0.00	26.84	1540.86	1567.70	0.00	396.22
Lingampally	3436.40	0.00	2.45	185.49	187.94	0.00	93.75
Mainoor	37876.42	0.00	0.00	87.75	87.75	0.00	234.06
Maqdumpur	3360.33	0.00	71.94	275.77	347.71	0.00	92.89
Medpally(n)	1659.35	0.00	544.02	239.85	783.87	0.00	61.09
Medpally(s)	1397.87	0.00	438.58	351.75	790.33	0.00	19.77
Mohammednagar	4200.55	0.00	182.13	958.00	1140.13	0.00	168.62
Nasrullabad	3826.69	0.00	935.57	503.77	1439.34	0.00	55.05
Nizamsagar	9443.27	0.00	3.15	991.21	994.36	0.00	818.64
Rampur	6750.54	0.00	938.68	424.68	1363.36	0.00	55.39
Rampur kalan	6997.31	0.00	2.78	463.32	466.10	0.00	414.73
Shantapur	11793.81	0.00	91.63	811.04	902.67	0.00	263.09
Taglepally	21198.38	0.00	787.41	496.72	1284.13	0.00	90.76
Total	204417.39	0.00	8299.99	12442.84	20742.83	-6.42	4714.35
KAMMARPALLI Range							
Basheerabad	2770.13	0.00	380.95	158.15	539.10	-7.05	13.14
Bheemgal	35062.45	0.00	967.47	873.44	1840.91	-9.00	327.13
Bheemnagar	2833.49	0.00	1380.28	512.64	1892.92	0.00	90.27
Kammarpally	88634.55	0.00	146.16	343.76	489.92	0.00	66.20
Karepally	1935.00	0.00	1035.32	387.63	1422.95	0.00	104.26
Konapur (n)	4757.80	0.00	1452.88	1354.66	2807.54	-10.58	70.17
Konapur (s)	3816.98	0.00	1278.73	1031.82	2310.55	0.00	79.73
Konasamundar	4855.08	0.00	506.27	613.33	1119.60	-3.91	194.40
Manal	4200.35	0.00	952.61	612.60	1565.21	-11.60	144.24
Mendora	1993.38	0.00	442.72	257.82	700.54	-45.32	61.50
Tadlapally	2398.70	0.00	1397.23	462.59	1859.82	-35.01	86.86
Tatpally	2621.41	0.00	1461.70	668.48	2130.18	-33.95	71.78
Total	155879.32	0.00	11402.30	7276.90	18679.20	-156.42	1309.68



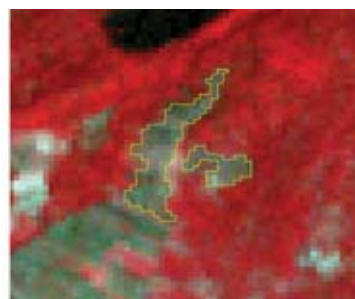
NIZAMABAD Range							
Abbapur	42813.56	0.00	32.68	361.22	393.90	0.00	164.61
Amrad	6728.72	0.00	466.88	318.51	785.39	0.00	11.76
Badsi	4468.06	0.00	1294.21	420.95	1715.16	-25.46	29.39
Kalpole	2363.29	0.00	1054.67	734.65	1789.32	0.00	44.83
Kulaspur	5300.40	0.00	1039.73	553.68	1593.41	-2.18	97.42
Mallaram	7192.55	0.00	357.69	1101.73	1459.42	0.00	30.58
Mamidipally	31905.08	0.00	499.17	995.68	1494.85	0.00	310.29
Manchippa	3189.92	0.00	840.63	787.79	1628.42	-1.82	84.60
Mosra	10394.63	0.00	691.12	712.06	1403.18	0.00	117.00
Mudakpally	2505.52	0.00	782.89	496.01	1278.90	0.00	32.42
Munipally	6874.07	0.00	904.43	838.83	1743.26	0.00	133.11
Muthukunta	4081.25	0.00	619.79	928.79	1548.58	0.00	20.31
Secundrapur	6338.21	0.00	65.37	522.87	588.24	0.00	75.73
Sirpur	5165.81	0.00	1468.98	589.89	2058.87	0.00	44.43
Thanakalan	5796.66	0.00	316.35	1194.53	1510.88	0.00	345.10
Timmapur	3489.68	0.00	1071.84	946.60	2018.44	0.00	108.17
Yamcha	12995.87	0.00	0.00	192.03	192.03	0.00	272.48
Total	161603.29	0.00	11506.43	11695.81	23202.24	-29.46	1922.23
Division total	521900.00	0.00	31208.72	31415.55	62624.27	-192.30	7946.26

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	78.59820
Latitude	18.58162
Area_Ha	8.76
Class	DF TO SF
Comp_No	52
Beat	Manal
Range	Kammarpalli
Division	Nizamabad

31. Eluru Division

Rajahmundry Circle

Introduction: Eluru Forest Division lies in the North eastern part of Andhra Pradesh, between latitude 16° 18' 05" and 17° 28' 52"N and longitude 80° 52' 04" and 81° 51' 31". The Geographical Area of the Division is 7742 km², which constitutes 100 % of the total area of the District. The Division has two physiographic zones, the plains and Hills. The climate of Eluru division is characterized by high humidity nearly all the year round with oppressive summer and good seasonal rainfall. The major rivers falling in the Division Godavari, Gauthami, Vasita. **Land use pattern** of the Division is given in **Table 31.1**

Deccan traps, Alluvial deposits, Lower or upper Gondwana ediments, Khondalites and Charcolites occupy the districts. Loamely soils, Laterite soils and black cotton soils are found in the district. Temperatures ranging from 19°C to 37°C and the annual rainfall are about 1076mm. South West monsoon gives more rain than North East monsoon. The total **population** of the Division and District is 3.5 millions (2001 census) and the per capita forest is 0.021 Ha

Recorded Forest Area: The **total notified forest area** of the Division is 773.03 Km², which is 10%

of the total geographical area. Reserved and Protected forests Constitute 732.11 Km² (95%), 40.9 Km² (5%) of the total forest area respectively.

As per the Champion and Seth's classification forest types are Southern secondary moist mixed deciduous forests, Southern tropical secondary moist mixed deciduous forests, tropical secondary dry deciduous scrub forests and Tropical dry evergreen scrub forests.

Protected Area: The Division is partly has Kolleru and Papikonda Wild Life Sanctuaries. Out of 773.02 Km² of forest area 308.55 Km² is included in the Kolleru. It is the largest fresh water lake in the Country. It is one of the Ramsar convention wetland sites. Part of 591 Km² Papikonda Wild Life Sanctuary falls in this division

Community Forest Management: There are 213 **Vana Samrakshana Samities (VSSs)** in the Division 414.54 Km² forest area, which constitutes 53% of forest area.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008 - Mar 2009), is 693.82, which is 9% of the total Geographical area. In terms of the forest canopy density classes, the Division has 519.62 Km² of Moderately Dense Forests, and 174.20 Km² Open Forests. The area of the Scrub is 45.53 Km², that of Non-Forest is 33.08 Km² and Water Bodies is 0.59 Km². the distribution of the forest cover of the division is shown in **Figure 31.1**.

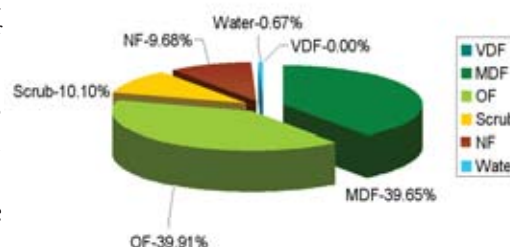
• The **Distribution of Forest Cover** in the CFM areas is as follows: 26.62 Km² in Moderately Dense Forests, 107.88 Km² in Open Forests. The area of the Scrub is 25.35 Km², 15.22 Km² is Non-Forest and 0.06 Km² is water bodies. • **Comparison** of the current forest cover (Satellite data of Dec 2008 - Mar 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007), shows a net loss of 1095 Ha forest cover.

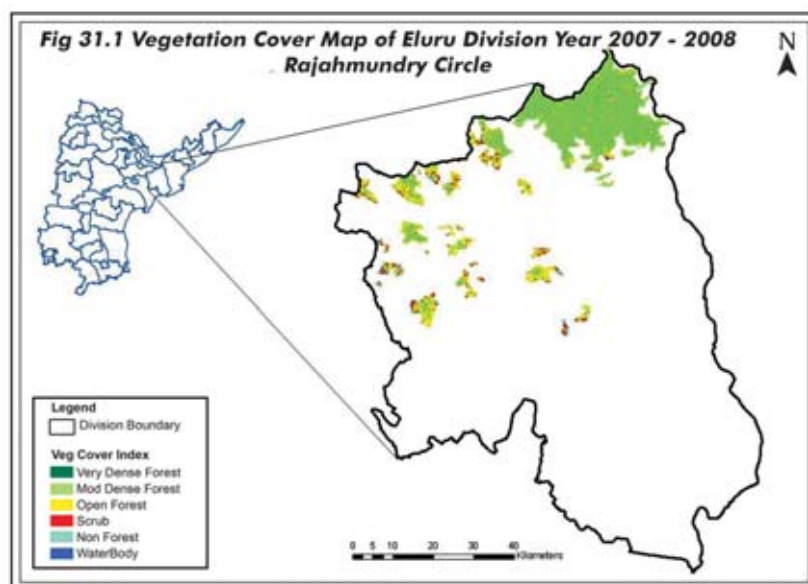
• The **change matrix**, given in **Table 31.2** reveals that there has been a decrease of 3.74 Km² of moderately dense forest and 7.21 Km² of open forest.

• The **simplified forest cover change matrix** is given in **Table 31.3** and **Table 31.4**.

Table 31.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	7742.00	
Forest including Scrub	739.36	9.55
Agriculture	5591.90	72.23
Land with Scrub	58.92	0.75
Fallow Lands	40.77	0.53
Grasslands	0.00	0.00
Settlements	143.74	1.86
Vegetation outside Forest	417.04	5.39
Water bodies	750.27	9.69





On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations. • There are **43 Beats** in the division. Negative change in Forest cover is seen in 12 Beats and no change in 31 Beats. Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 31.5**.

Table 31.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Mar 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	515.88	0.00	2.77	0.97	0.00	519.62
Open Forest	0.00	0.00	166.99	0.00	7.21	0.00	174.20
Scrub	0.00	0.00	0.00	45.53	0.00	0.00	45.53
Non-Forest	0.00	0.00	0.00	0.00	33.08	0.00	33.08
Water	0.00	0.00	0.00	0.00	0.00	0.59	0.59
Total of 2008	0.00	515.88	166.99	48.30	41.26	0.59	773.02
Net Change	0.00	-3.74	-7.21	2.77	8.18	0.00	

Table 31.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Mar 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	682.87	10.95	0	693.82
Degraded Forest	0	78.61	0	78.61
Water	0	0	0.59	0.59
Total of 2008	682.87	89.56	0.59	773.02
Net Change	-10.95	10.95	0	0

Table 31.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Mar 2009)			Total of 2007
	Green	Barren	Water	
Green	731.17	8.18	0	739.35
Barren	0	33.08	0	33.08
Water	0	0	0.59	0.59
Total of 2008	731.17	41.26	0.59	773.02
Net Change	-8.17	8.17	0.00	

Table 31.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ELURU Range							
A r palem	20036.29	0.00	432.01	972.01	1,404.02	0.00	188.67
Barrikonda	17911.85	0.00	239.35	909.31	1,148.66	-7.58	232.72
Bhogole	15491.61	0.00	349.91	713.29	1,063.20	-85.21	384.52
Chintalapudi	9409.24	0.00	1,374.72	855.20	2,229.92	0.00	59.01
Dubacherla	28272.51	0.00	410.20	750.30	1,160.50	0.00	66.57
M.v.gudem	5031.73	0.00	1,165.91	1,042.90	2,208.81	-89.89	195.87
Nallajerla	20836.08	0.00	89.88	971.63	1,061.51	0.00	348.21
R.s.varam	93661.85	0.00	264.77	943.37	1,208.14	-36.65	67.34
Thadikelapudi	19998.68	0.00	196.97	857.02	1,053.99	-107.05	316.79
V.r.gudem	297843.89	0.00	164.25	447.03	611.28	-405.66	320.63
Velagalapalli	14876.38	0.00	39.49	631.13	670.61	-2.48	621.65
Yerraguntapalli	5184.11	0.00	394.31	676.23	1,070.54	-91.78	95.16
Total	548554.22	0.00	5121.75	9769.41	14891.16	-826.3	2897.13
JANGAREDDIGUDEM Range							
Aliveru	3033.31	0.00	2,972.28	49.41	3,021.70	0.00	0.00
Ankannagudem	1785.85	0.00	991.54	184.29	1,175.83	0.00	21.10
Antarvedigudem	6327.96	0.00	1,488.48	82.63	1,571.11	0.00	16.12
Darbhagudem	11140.87	0.00	12.85	814.51	827.36	-130.76	277.04
Doramamidi	4464.03	0.00	764.25	97.86	862.11	0.00	14.94
Gullapudi	10459.96	0.00	3,918.14	262.75	4,180.89	0.00	4.45
Jeelugumilli	3149.96	0.00	256.18	778.37	1,034.55	-1.2	293.59
Kamaiahpalem	4165.07	0.00	899.52	803.24	1,702.76	-27.59	223.46
Marlagudem	15753.54	0.00	122.90	554.71	677.61	0.00	86.11
Mulagalampalli	9196.95	0.00	881.36	1,106.75	1,988.11	-108.23	348.07
Total	69477.50	0.00	12307.50	4734.52	17042.02	-267.78	1284.88
KANNAPURAM Range							
Chinthapalli	2362.72	0.00	1,585.30	24.34	1,609.64	0.00	0.57
Dandipudi	17174.01	0.00	3,163.35	241.92	3,405.26	0.00	22.83
Kallumamidi	1563.45	0.00	1,136.90	15.36	1,152.26	0.00	0.00
Karakapadu	14776.89	0.00	444.78	93.01	537.80	0.00	9.09
Kopalli	3182.02	0.00	2,146.69	49.79	2,196.48	0.00	0.02
Kotrupalli	1013.71	0.00	981.94	30.04	1,011.98	0.00	0.00
Kovvada	15780.36	0.00	899.12	440.77	1,339.89	0.00	87.57
Kunkala	17751.42	0.00	2,221.53	153.44	2,374.98	0.00	4.58
L N D Pet	2280.89	0.00	1,642.09	347.50	1,989.59	0.00	99.03
P R Gudem	3123.74	0.00	2,198.79	227.91	2,426.70	0.00	6.82
Total	79009.21	0.00	16420.48	1624.08	18044.56	0.00	230.51
POLAVARAM Range							
Chilakaluru	3621.58	0.00	2,753.31	195.46	2,948.77	0.00	34.43
Kondrukota	5683.15	0.00	3,917.10	183.36	4,100.45	0.00	17.99
Kothuru	1939.12	0.00	556.39	107.67	664.06	0.00	4.14

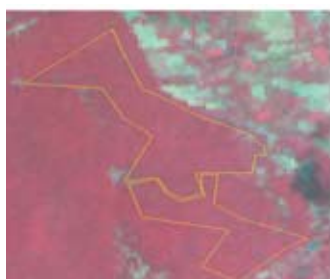


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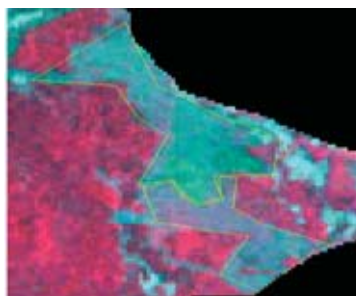
Nettappakota	3692.38	0.00	1,918.99	48.36	1,967.35	0.00	9.26
Polavaram	46890.98	0.00	1,102.94	44.14	1,147.08	0.00	6.83
Sirivaka	2295.57	0.00	1,593.33	249.62	1,842.95	0.00	21.19
Sivagiri	1862.33	0.00	922.44	189.65	1,112.09	0.00	3.44
Tekuru	2204.32	0.00	1,344.81	72.84	1,417.65	0.00	22.96
Thutigunta	2718.66	0.00	2,126.86	122.83	2,249.69	0.00	17.67
Udathapalli	908.96	0.00	757.40	-0.31	757.09	0.00	0.00
Vinjaram	5342.03	0.00	1,119.24	78.88	1,198.12	0.00	2.45
Total	77159.08	0.00	18112.79	1292.49	19405.29	0.00	140.35
Grand Total	774200.01	0.00	51962.52	17420.50	69383.02	-1,094.08	4552.87

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Division	Eluru
Range	Jangareddygudem
Beat	Mulagalampalli
Comp	152
Class	Dense to NF
Area-ha	95.56 ha
Latitude	17.25084
Longitude	81.27090



Kolleru Birds Sanctuary

32. Kakinada Division

Rajahmundry Circle

Introduction: Kakinada Forest Division lies in the north eastern part of Andhra Pradesh, between latitudes 16° 18' 04" and 18° 00' 54" N and longitude 81° 30' 08" and 82° 36' 17" E. The Geographical Area of the Division is 10807 Km². Godavari District can be broadly classified into three natural divisions namely the Delta, Up land and Agency or hill tracts. The general elevation of the district varies from a few meters near the sea to about 300 meters in the hills of the agency. The Eastern Ghats rise by gradations from the level of the coast and spread throughout the erstwhile agency Taluks of Rampachodavaram and Yellavaram. The delta portion constituting the whole of Konaseema and portions of Kakinada, Ramachandrapuram and Rajahmundry erstwhile Taluks, presents a vast expanse of rice-fields surrounded by plantain, betel, coconut gardens and innumerable palmyrahs. The erstwhile Taluks of Tuni, Pithapuram, Peddapuram and Portions of Kakinada, Ramachandrapuram and Rajahmundry constitute the upland areas. The main soils in the district are alluvial (clay loamy) red soil, sandy loam and sandy clay. There is mostly alluvial soil in Godavari delta and sandy clay soil at the tail end portions of Godavari river, red loamy soil in upland and agency area of the district. The major rivers falling in the division are Godavari, pampa and Yeleru.

Land use pattern of the division is given in Table 32.1.

The region mostly has a tropical climate like the rest of the Coastal Andhra region. The summers (March-June) are very hot and humid. The rainy season (July-Jan) is the best time to visit this place with the fields brilliantly green with paddy crops, rivulets flowing with water and the sun shining brightly, but not burning as it does in the summer. Temperatures ranging from 10°C to 48°C and the annual rainfall are about 1280mm.

The total population of the Division & district is 4.8 million (2001 Census) and the per capita forest is 0.066 Ha. The population density is 454 persons per Km².

Table 32.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	10807	
Forest including Scrub	2971.09	27.49
Agriculture	5574.51	51.58
Land with Scrub	331.78	3.07
Fallow Lands	224.00	2.07
Grasslands	22.00	0.20
Settlements	130.19	1.20
Vegetation outside Forest	1149.41	10.64
Water bodies	404.02	3.75

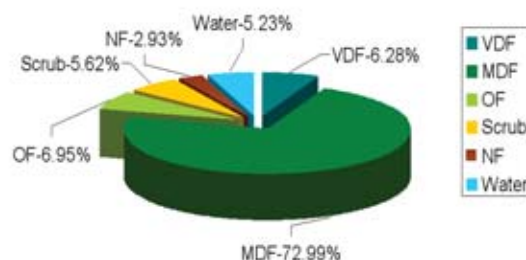
Recorded Forest Area: The total notified forest area of the Division is 3235.39 Km², which 32.71% of the total geographical area. Reserved and Protected Forests Constitute 2701.31 Km² (83.3%), 531.13 Km² (22.7%) of the total forest area respectively.

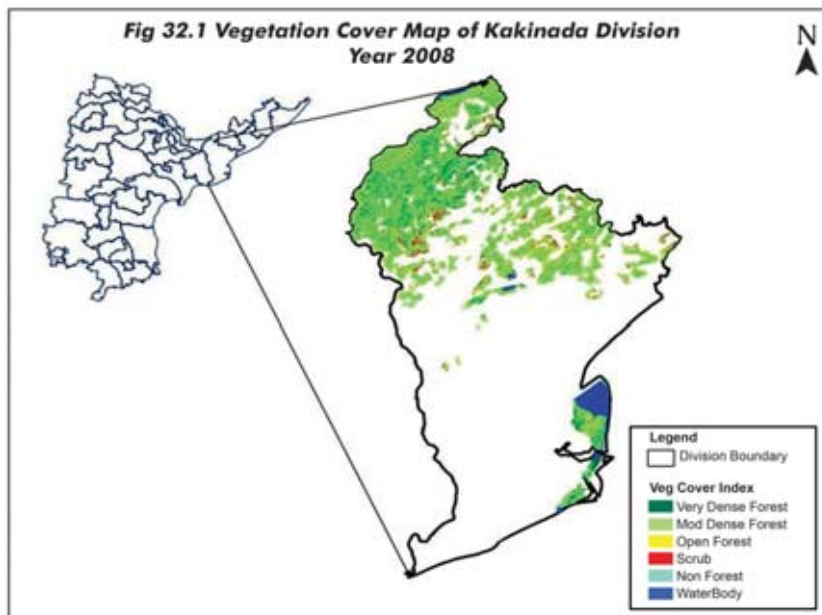
As per the Champion and Seth's classification Southern secondary moist mixed deciduous forests, Southern tropical secondary moist mixed deciduous forests and dry deciduous scrub forests.

Protected Area: The division has Koringa and part of Papikonda Wild Life Sanctuaries. Out of 3235.39 Km² of forest area this division koringa occupies 235.7 Km² and it is the largest surviving patch of Mangrove forests in the State with more than 65 Mangrove tree species, Home for the rare, endangered Smooth Indian Otter, Fishing Cat, Estuarine Crocodile. Part of 591 km² of Papikonda sanctuary located in this division.

Community Forest Management: There are 529 Vana Samrakshana Samities (VSSs) in the Division 1148.05 Km² forest area, which constitutes 35.4% of forest area,.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008 - Jan 2009), is 2739.43 which is 25.3% of the total Geographical area. In terms of the forest canopy density classes, the Division has 203.04 Km² of Very Dense Forests, 2361.61 Km² Moderately Dense forests, and 224.78 Km² Open Forest. The area of the Scrub is 181.67 Km², that of Non-Forest is 95.23 Km² and Water





Bodies 169.06 Km². the distribution of the forest cover of the Division is shown in **Figure 32.1**.

- The **distribution of Forest Cover** in the CFM areas is as follows: - 60.91 in Very dense forests, 905.91 Moderately Dense Forests, 89.36 Km² in Open Forests. The area of the Scrub is 54.69 Km², 26.79 Km² is Non-Forest and 10.38 Km² is water bodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008 - Jan 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007), shows a net loss of 829.1 Ha forest cover.

- The **forest cover change matrix**, given in **Table 32.2** reveals that there has been a decrease of 4.88 Km² of moderately dense forest and 3.41 Km² of open forest.

- The **simplified forest cover change matrix** is given in **Table 32.3** and **Table 32.4**.

On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for raising of plantations.

- There are **99 Beats** in the Division. Negative change in Forrest Cover is seen in 13 Beats and no change in 86 Beats. Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 32.5**.

Table 32.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	203.04	0.00	0.00	0.00	0.00	0.00	203.04
Moderately Dense Forest	0.00	2356.73	0.00	0.17	4.71	0.00	2361.61
Open Forest	0.00	0.00	221.22	3.29	0.27	0.00	224.78
Scrub	0.00	0.00	0.15	181.45	0.07	0.00	181.67
Non-Forest	0.00	0.00	0.00	1.06	94.17	0.00	95.23
Water	0.00	0.00	0.00	0.00	0.00	169.06	169.06
Total of 2008	203.04	2356.73	221.37	185.97	99.22	169.06	3235.39
Net Change	0.00	-4.88	-3.41	4.30	3.99	0.00	0.00

Table 32.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	2731.14	8.29	0.00	2739.43
Degraded Forest	0.00	276.90	0.00	276.90
Water	0.00	0.00	169.06	169.06
Total of 2008	2781.14	285.19	169.06	3235.39
Net Change	-8.29	8.29	0.00	

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Green	Barren	Water	
Green	2967.11	3.99	0.00	2971.10
Barren	0.00	95.23	0.00	95.23
Water	0.00	0.00	169.06	169.06
Total of 2008	2967.11	99.22	169.06	3235.39
Net Change	-3.99	3.99	0.00	

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ADDATHIGALA Range							
Addathigala	4103.86	4.27	1347.46	198.9	1550.63	0	100.22
Chavitidibbalu	9034.82	206.96	2488.17	120.59	2815.72	0	257.51
Dakodu	4082.24	58.66	2610.96	115.55	2785.17	0	115.91
Dutcherthi	6169.69	30.22	2645.35	234.89	2910.46	0	104.75
Kalimamidi	7116.83	10.53	3340.92	357.73	3709.18	0	311.3
P.yerragonda	8986.63	1351.87	6201.23	302.64	7855.74	0	374.03
Perikivalasa	7467.08	1254.3	4431.39	259.06	5944.75	0	442.03
Vedullakonda	8000.62	14.41	1047.09	188.09	1249.59	0	158
Vetamamidi	5086.66	42.1	1629.43	141.04	1812.57	0	57.19
Y.ramavaram	11466.17	709.94	5670.8	202.95	6583.69	0	213.84
Total	71514.6	3683.26	31412.8	2121.44	37217.5	0	2134.68
CORINGA Range							
Bhyravapalem	4039.4	347.51	2168.09	16.87	2532.47	0	0
Coringa	6283.93	802.07	3911.71	827.87	5541.65	0	93.64
Hope iseland	14256.17	88	2505	500.54	3093.54	0	89.68
Neellarevu	69490.13	0.12	0.93	0	1.05	0	0.01
Total	94069.63	1237.7	8585.73	1345.28	11168.71	0	183.33
ELESWARAM Range							
Anantharam	9301.66	3.66	2048.06	302.57	2354.29	0	139.16
Bavuruvaka	3430.73	37.11	2083.54	87.54	2208.19	0	52.2
Kondalingamparthi	3014.89	0.83	940.35	512.75	1453.93	0	224.02
Kothuru	37130.48	0.72	2344.48	300.44	2645.64	0	176.59
Lingamparthi	29799.62	31.08	1799.95	131.26	1962.29	0	61.74
Lododdi	2739.16	72.57	1964.59	159.54	2196.7	0	150.65
Pedmallapuram	6204.36	178.51	3650.52	470.38	4299.41	0	252.14
Peddipalem	15102.11	199.75	5111.98	340.09	5651.82	0	215.64
Raghavapatnam	5920.4	29.02	1207.29	201.48	1437.79	0	173.91
S.agraharam	9406.7	20.94	1735.07	234.18	1990.19	-2.48	184.21
Vatangi	2933.07	33.93	1693.44	236.25	1963.62	-224.53	106.66
Total	124983.18	608.12	24579.27	2976.48	28163.87	-227.01	1736.92



GOKAVARAM Range							
Angaluru	2434.01	0	1189.66	92.33	1281.99	0	35.06
Chinabarang	4363.16	2.71	1174.84	190.64	1368.19	0	246.09
Dandangi north	2759.86	0	969.17	34.06	1003.23	0	6.13
Dandangi south	2012.27	0	456.62	71.04	527.66	0	15.92
Devaram	1688.22	4.35	416.42	6.87	427.64	0	0.66
Devipatnam	2386.54	5.82	891.66	111.77	1009.25	0	66.94
Indukurupeta	8788.57	0	257.52	27.44	284.96	0	10.8
Katchuluru	1680.02	86.08	1219.06	18.85	1323.99	0	22.98
Kondamodalu	6765.91	339.59	4635.64	154.07	5129.3	-1.74	134.39
Manturu	3124.42	1.01	1364.22	75.15	1440.38	0	10.56
Pedanuthula	4280.49	63.19	1408.86	68.54	1540.59	0	57.38
Purushothapatnam	23152.96	0	463.1	0.72	463.82	0	3.95
Sarabhavaram	12152.19	1.33	569.56	3.58	574.47	0	4.07
Teliperu	5766.55	357.7	4005.78	125.38	4488.86	0	128.11
Veeravaram	2216.9	0	1196.61	82.75	1279.36	0	49.64
Total	83572.07	861.78	20218.72	1063.19	22143.69	-1.74	792.68
KAKINADA Range							
Atchutapuram	8801.98	1.5	927.1	504.34	1432.94	0	564.62
Beach road	112091.28	0	0	0	0	0	0
Dewancheruvu	30759.4	0	508.13	98.33	606.46	0	101.41
Kandikuppa	86949.45	0	6.98	1.83	8.81	0	0.38
Kandikuppa plantation	5448.16	199.04	2096.76	268.25	2564.05	0	81.97
Kothaperumallapuram	10355.48	0	0	0	0	0	0
Masanitippa	6400.32	464.09	943.66	85.61	1493.36	0	41.78
Murari	30408.2	24.25	544.47	6.11	574.83	0	9.15
Rajupeta	17227.67	18.36	2851.4	355.01	3224.77	0	161.88
Ratikalva	23353.77	486.68	583.41	50.51	1120.6	0	21.54
Sangavaka	8766.91	4.56	954.76	215.44	1174.76	0	103.3
Vodalarevu	53701.52	0	106.53	15.23	121.76	0	29.61
Vontimamidi	6809.31	0	0	0	0	0	0
Total	401073.45	1198.48	9523.2	1600.66	12322.34	0	1115.64
RAJAVOMMANGI Range							
Badadanapalli	2752.97	0	1681.98	178.99	1860.97	0	264.23
Doramamidi	5049.72	0	2569.63	279.52	2849.15	0	165.17
J.annavaram	6304.76	0	2893.19	871.69	3764.88	0	270.14
Jaddangi	11066.83	0	2409.93	895.48	3305.41	0	661.63
Labbarthi	5497.39	0	3102.21	544.04	3646.25	0	434.07
Lagarai	4540.77	0	739.98	89.49	829.47	0	84
Laxmipuram	3742.64	1.44	904.33	254.8	1160.57	0	96.99
Rajavommangi	6219.44	0	1608.74	424.45	2033.19	-16.99	602.78
Thimmapuram	4526.68	7.55	1415.71	400.45	1823.71	0	203.29
Vayyada	2882.18	92.72	1930.78	244.87	2268.37	0	188.37
Veerabhadrapuram	2642.83	8.91	1366.47	175.44	1550.82	0	39.42
Total	55226.21	110.62	20622.95	4359.22	25092.79	-16.99	3010.09

RAMPACHODAVARAM Range							
Akumamidikota	13700.44	1869.97	9435.78	464.76	11770.51	-17.07	437.1
Chintalapudi	4155.61	756.33	1984.05	65.56	2805.94	0	119.09
Daragadda	6866.02	131.57	1599.44	152.2	1883.21	0	399.39
Devarapalli	9453.09	812.46	6095.72	525.61	7433.79	0	541.24
Donkarai	15609.19	243.39	8114.58	1222.78	9580.75	-10.87	802.09
Geddada	9556.73	520.82	6357.64	944.75	7823.21	-9.14	1574.15
Gurthedu	5809.4	164.02	2073.88	187.23	2425.13	0	411.13
Kakuru	10088.1	1061.92	8348.97	182.93	9593.82	-9.36	162.4
Kutrawada	17111.19	1166.59	14563.95	665.56	16396.1	0	484.59
Mangampadu	4364.46	32.68	2910.06	352.48	3295.22	0	342.85
Maredumilli north	4433.7	582.92	3509.81	42.78	4135.51	0	10.4
Maredumilli south	7968.83	979.95	6678.23	89.24	7747.42	0	69.17
Palagondi	5084.73	391.68	2415.7	225.55	3032.93	0	179.75
Pindikuruvalasa	10744.45	781.69	8347.84	266.71	9396.24	0	281.18
Rampa	3485.32	27.04	790.03	80	897.07	0	142.5
Tanganakota	6066.92	237.66	4332.25	283.53	4853.44	0	322.38
Valamuru	10638.44	1538.75	8461.35	253.08	10253.18	0	159.77
Total	145136.62	11299.44	96019.28	6004.75	113323.5	-46.44	6439.18
SUDIKONDA RANGE							
Appanapalem	6078.59	1.72	274.53	25.76	302.01	0	25.82
Beerampalli	7984.2	2.23	1566.3	178.45	1746.98	0	50.63
Bhavaram	4048.84	0	342.16	54.27	396.43	-25.22	24.52
Bhimavaram	5370.59	99.42	1801.12	132.53	2033.07	0	77.91
Burugubanda	2868.62	1.61	1155.21	97.41	1254.23	0	57.52
D.velamalakota	10907.55	827.97	6200.05	614.44	7642.46	0	1056.37
Korumilli	8783.42	8.7	1067.64	207.55	1283.89	0	146.43
Mallavaram east	4303.14	0	757.63	90.24	847.87	0	50.04
Mallavaram west	3249.97	0.32	570.5	45.32	616.14	-41.85	17.19
Matlapadu	2234.61	10.25	1144.28	79.48	1234.01	0	51.24
Molleru	8441.16	0	2193.62	458.16	2651.78	0	274.74
Narasapuram	2971.53	0.67	961.6	168.74	1131.01	0	124.62
Pidathamamidi	10237.53	25.42	2598.12	413.89	3037.43	-66.12	449.6
Pinjarikonda	7929.9	75.1	1629.07	126	1830.17	0	44.56
R yerrampalem	7277.71	100.79	772.85	6.96	880.6	-60.71	0.93
Sudikonda north	3082.82	0	831.15	164.49	995.64	0	206.39
Sudikonda south	5605.02	0.61	453.02	97.74	551.37	0	54.44
Tirumalayapalem	3749.04	149.64	880.1	44.74	1074.48	-343.02	41.72
Total	105124.24	1304.45	25198.95	3006.17	29509.57	-536.92	2754.67
Grand Total	1080700	20303.85	236160.9	22477.2	278941.9	-829.1	18167.2

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



33. Krishna Division

Introduction: Krishna Forest Division lies in the North eastern part of Andhra Pradesh, between latitudes 15° 42' 19" and 17° 9' 10" N and longitudes 80° 00'07" and 81° 33' 13"E. The Geographical Area of the Division is 8727 km². The Division has two physiographic zones, the plains and Hills. The major rivers falling in the division are Krishna, Keesara, Tammileru and Budameru.

Land use pattern of the Division is given in **Table 33.1**.

Table 33.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	8727.00	
Forest including Scrub	504.73	5.78
Agriculture	6089.71	69.78
Land with Scrub	137.42	1.57
Fallow Lands	528.28	6.05
Grasslands	0.00	0.00
Settlements	252.16	2.89
Vegetation outside Forest	386.23	4.43
Waterbodies	828.47	9.50

The average highest temperature in the summer is 45° C and the minimum average temperature in December is 17°C and the average annual rainfall is 1028mm

Deccan traps, Alluvial deposits, Lower or upper Gondwana ediments, Khondalites and Charcolites occupy the districts. Loamely soils, Latererite soils and black cotton soils are found in the division. The total **population** of the Division & District is 4.1 millions (2001 Census) and the per capita forest is 0.015 Ha.

Recorded Forest Area: The total notified forest area of the Division is 644.52 Km², which 7.3% of the

total geographical area. Reserved and Protected Forests Constitute 417.44 Km² (65%) and 227.07Km² (35%) of the total forest area respectively.

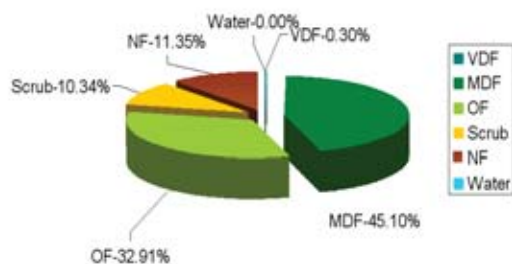
As per the Champion and Seth's classification Dry Deciduous Scrub Forests, Southern Thorn Forest, Tropical Evergreen scrub Forest and Tidal Swamp Mangrove Forests .

Protected Area: This Division has Kolleru and Krishna Wild Life Sanctuaries .Out of 644.52Km² of forest area part of kolleru sanctuary which is spread over 308.55 Km² is included in the division. Part of 194.81 Km² of Krishna sanctuary is included in this division.

Community Forest Management: There are 68 **Vana Samrakshana Samithies** (VSSs) in the Division 624.80 Km² forest area, which constitutes 96.8% of forest area, is under the management of the VSSs.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Oct2008 - Feb 2009), is 292.65 Km², which is 7.3% of the total Geographical area. In terms of the forest canopy density classes, the Division has 1.96 Km² of Moderately Dense Forests, and 290.69 Km² of Open Forests. The area of the Scrub forests is 212.08 Km² and that of Non-Forest 66.66 Km² and Water Bodies 73.13 Km². The distribution of the forest cover of the division is shown in **Figure 33.1**.

• The **distribution of Forest Cover** in the CFM areas is as follows: 0.042 Km² in Moderately Dense Forest, 421.25 Km² in Open Forests. The area of the Scrub is 189.32 Km² , 13.62 Km² is Non-Forest and 0.56 Km² is water bodies.



• **Comparison** of the current forest cover (Satellite data of Oct 2008 - Feb 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Jan 2008), shows a net loss of 35.2 Ha forest cover.

• The **change matrix**, given in **Table 33.2** reveals that there has been a decrease of 0.02Km² of moderately dense forest and 3.50Km² of open forest.

• The simplified forest cover change matrix is given in **Table 33.3** and **Table 33.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in the forest cover is due to encroachments.

- There are **34 Beats** in the division. Negative change in Forest cover is seen in 9 Beats, positive change is seen in 3 Beats and no change in 50 Beats.

- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 33.5**.

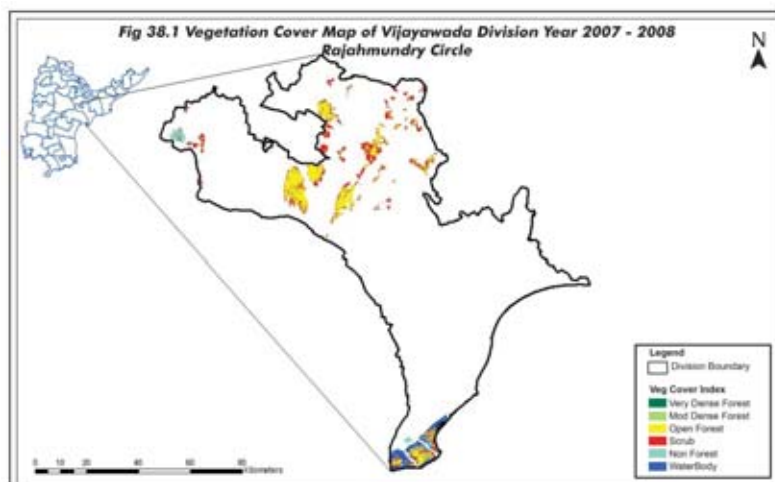


Table 33.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	1.94	0.00	0.00	0.02	0.00	1.96
Open Forest	0.00	0.00	286.92	0.00	3.44	0.33	290.69
Scrub	0.00	0.00	0.27	210.77	1.04	0.00	212.08
Non-Forest	0.00	0.00	0.00	0.00	66.66	0.00	66.66
Water	0.00	0.00	0.00	0.00	0.00	73.13	73.13
Total of 2008	0.00	1.94	287.19	210.77	71.16	73.46	644.52
Net Change	0.00	-0.02	-3.50	-1.31	4.50	0.33	

Table 33.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	289.13	3.52	0	292.65
Degraded Forest	0	278.41	0.33	278.74
Water	0	0	73.13	73.13
Total of 2008	289.13	281.93	73.46	644.52
Net Change	-3.52	3.19	0.33	0

Table 33.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 – Jan 2008)	2008 (Data of Oct 2008 – Feb 2009)			Total of 2007
	Green	Barren	Water	
Green	499.90	4.83	0	504.73
Barren	0.00	66.33	0.33	66.66
Water	0.00	0.00	73.13	73.13
Total of 2008	499.90	71.16	73.46	644.52
Net Change	-4.83	4.50	0.33	



Table 33.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
MYLAVARAM Range							
A.Konduru	9,206.72	0.00	12.59	1,280.13	1,292.72	0.00	487.00
Chandragudem	3,745.00	0.00	0.00	86.08	86.08	12.80	778.53
Cheemalapadu	9,074.69	0.00	0.00	620.89	620.89	0.00	1,136.41
Kakarla	23,652.24	0.00	0.00	122.32	122.32	6.00	499.79
Pondugula	5,180.75	0.00	2.67	1,065.76	1,068.43	0.00	559.35
T.gannavaram	7,305.42	0.00	0.00	322.64	322.64	0.00	531.88
Velvadam	7,118.69	0.00	0.00	66.51	66.51	0.00	555.96
Vinagadapa	25,686.43	0.00	2.94	1,148.04	1,150.98	0.00	366.61
G.Konduru	2,594.04	0.00	0.00	0.00	0.00	0.00	0.00
Total	93,563.98	0.00	18.20	4,712.37	4,730.57	18.80	4,915.53
NUZVID Range							
Anneraopeta	5,911.46	0.00	0.00	907.85	907.85	0.00	440.77
Chillaboinapalli	12,871.06	0.00	4.39	395.01	399.40	-13.70	327.15
Chinnampeta	18,747.92	0.00	25.09	432.70	457.79	-97.00	1,333.53
Chittapur	21,567.43	0.00	0.54	311.47	312.01	-1.50	611.07
Kanimerla	3,772.24	0.00	0.63	571.87	572.50	-10.55	822.24
Katrenupadu	14,295.25	0.00	72.67	668.27	740.94	-168.00	872.36
Ramanakkapeta	9,760.72	0.00	1.65	236.93	238.58	0.00	476.42
Reddigudem	13,240.48	0.00	2.23	607.73	609.96	-12.00	703.21
Sunkollu	2,915.70	0.00	0.00	596.77	596.77	0.00	804.96
Yenamadala	19,604.96	0.00	0.00	196.38	196.38	0.00	296.95
Total	122,687.22	0.00	107.20	4,924.98	5,032.18	-302.75	6,688.66
VIJAYAWADA Range							
Duggiralapadu	7,895.68	0.00	2.36	1,313.56	1,315.92	0.00	367.19
Elichetladibba	8,971.04	0.00	0.00	739.64	739.64	0.00	808.51
Gandrai	69,631.18	0.00	0.56	205.64	206.20	2.00	1,458.72
Gangineni	2,805.43	0.00	2.37	1,194.51	1,196.88	0.00	93.13
Jaggiahpeta	9,069.19	0.00	0.00	5.67	5.67	0.00	338.59
Jujjuru	41,336.50	0.00	17.21	2,971.71	2,988.92	0.00	428.01
Koduru	6,454.14	0.00	0.00	1,085.95	1,085.95	0.00	583.34
Kondapalli	4,035.20	0.00	0.91	808.74	809.65	0.00	353.23
Kothurutadepalli	15,685.80	0.00	35.08	1,833.14	1,868.22	-35.00	469.59
Metlapalli	15,382.97	0.00	0.00	46.55	46.55	0.00	407.82
Mulapadu	34,410.05	0.00	1.36	4,191.64	4,193.00	-32.62	1,192.26
Nachugunta	12,428.39	0.00	0.00	2,499.31	2,499.31	0.00	1,417.88
Nunna	92,800.82	0.00	11.02	947.91	958.93	0.00	141.70
Sobhanapuram	10,819.87	0.00	0.00	764.14	764.14	-1.00	227.80
Sorlagondi	324,722.56	0.00	0.00	823.28	823.28	0.00	1,311.88
Total	656,448.82	0.00	70.87	19,431.39	19,502.26	-66.62	9,599.65
Grand Total	872,700.02	0.00	196.27	29,068.74	29,265.01	-350.57	21,203.84

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

34. Narsipatnam Division

Introduction: Narsipatnam Forest Division lies in the north Eastern part of Andhra Pradesh and lies between latitudes 17° 27' 33" and 18° 07' 02" N and longitudes 81° 51' 47" and 82° 47' 59" E. The Geographical Area of the Division is 3754.99 Km². which is 30.95% of the geographical area of the district .The Division has two physiographic zones, the plains and Hills. The climate of Narsipatnam division is characterized by high humidity nearly all the year round with oppressive summer and good seasonal rainfall. The climate of the hill parts of the district is different from that of the plain. Altitude varies from 130 M to 1529 M MSL.The major rivers falling in the division are Sileru, A tributary of Godavari, Varaha and Thandava which drain to sea.

Land use pattern of the Division is given in **Table 34.1.**

The climate of the division is characterized by by three distinct seasons. i) Summer (ii) Rainy and (iii) winter seasons. The temperature ranging from 5° C to 45° C and annual rainfall is about 712mm, received mainly from Southwest monsoons.

The divisions geology comprises of oldest formation of charnokite series and predominant khondalite group of rocks of Precambrian age. The rocks are essentially Khondalite group with a few charnokite, bands, granites, quartzites, calcigranulites, pegmatites.The chief mineral found is Bauxite in all the high hills of the agency area, wherever grasslands are existing .There are three soil types

in the division are Sandy soils of khondalites and quartzites, Clayey sands of charnockites and granites and Coastal dune sand dunes of quartzite's.

The total population of the Division is 0.47 millions (2001 Census) which is 12 % of the total population of the district. The per capita forest is 0.49 Ha. The population density is 126 persons per Km².

Recorded Forest Area: The total Notified forest of the Division is 2353.72 Km² which is 62.67% of the geographical area. Reserved-, Protected- and un-classed forests constitute 989.92km² (42.12%), 1356.31 Km² (57.71%) and 4.05 Km² (0.17%) of the total forest area respectively.

As per the Champion and Seth's classification Southern tropical semi evergreen forests, Southern tropical secondary moist mixed deciduous forests, southern tropical secondary dry deciduous forests, Tropical dry evergreen scrub southern thorn forests and dry savanna forests.

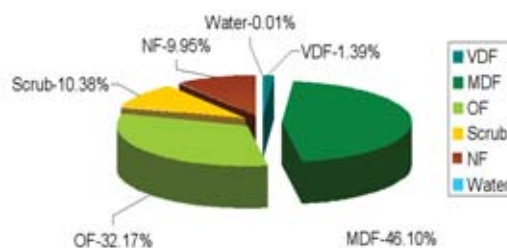
Protected Area:No protected areas are found in this division.

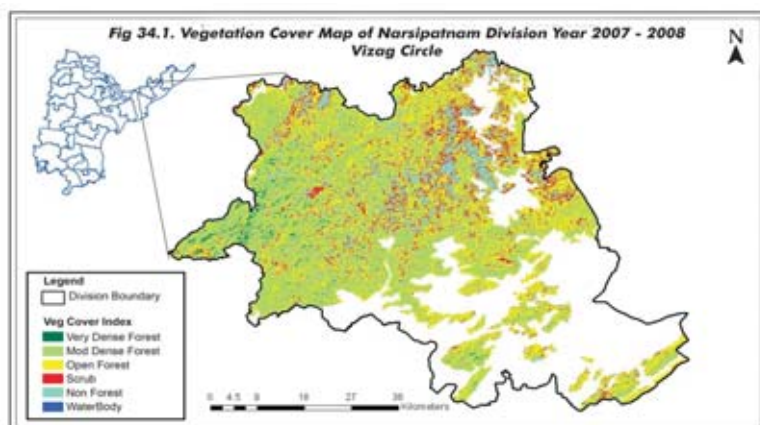
Community Forest Management: There are 284 Vana Samrakshana Samities (VSSs) in the Division. 231.13 Km² forest area, which constitutes 9.8% of forest area.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008 - Jan 2009), is 1874.94Km², which is 49% of the total Geographical area. In terms of the forest canopy density classes, the Division has 32.80Km² of Very Dense Forests, 1085.03 Km² Moderately Dense Forests, and 757.08 Km² Open Forests. The area of the Scrub is 244.29 Km², that of Non-Forest is 234.22 Km² and Water Bodies is 0.33 Km². the distribution of the forest cover of the Division is shown in **Figure 34.1.**

Table 34.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3754.99	
Forest including Scrub	2119.19	56.44
Agriculture	918.52	24.46
Land with Scrub	249.05	6.63
Fallow Lands	22.23	0.59
Grasslands	0.13	0.00
Settlements	8.50	0.23
Vegetation outside Forest	381.07	10.15
Waterbodies	56.30	1.50





• The **distribution Forest Cover** in the CFM areas is as follows: 0.87Km² in Very dense Forests, 99.43 Km² Moderately Dense Forests, 96.17Km² in Open Forests. The area of the Scrub is 20.13 Km², 14.52 Km² is Non-Forest and 0.02 Km² is Water bodies. • **Comparison** of the current forest cover (Satellite data of Dec 2008 - Jan 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007), shows a net loss of 16 Ha forest cover. • The **change matrix**, given in

Table 34.2. reveals that there has been a decrease of 0.16 Km² of moderately dense forest. • The **simplified forest cover change matrix** is given in **Table 34.3** and **Table 34.4**. • On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments. • There are **52 Beats** in the division. Negative change in Forest cover is seen in 2 Beats and no change in 50 Beats Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 34.5**.

Table 34.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	32.80	0.00	0.00	0.00	0.00	0.00	32.80
Moderately Dense Forest	0.00	1084.87	0.00	0.00	0.16	0.00	1085.03
Open Forest	0.00	0.00	757.08	0.00	0.00	0.00	757.08
Scrub	0.00	0.00	0.00	244.29	0.00	0.00	244.29
Non-Forest	0.00	0.00	0.00	0.00	234.22	0.00	234.22
Water	0.00	0.00	0.00	0.00	0.00	0.33	0.33
Total of 2008	32.80	1084.87	757.08	244.29	234.38	0.33	2353.75
Net Change	0.00	-0.16	0.00	0.00	0.16	0.00	

Table 34.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1874.75	0.16	0	1874.91
Degraded Forest	0	478.51	0	478.51
Water	0	0	0.33	0.33
Total of 2008	1874.75	478.67	0.33	2353.75
Net Change	-0.16	0.16	0	0

Table 34.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Green	Barren	Water	
Green	2119.04	0.15	0	2119.19
Barren	0	234.23	0	234.22
Water	0	0	0.33	0.33
Total of 2008	2119.04	234.38	0.33	2353.75
Net Change	-0.15	0.16	0.00	

Table 34.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHINTAPALLI Range							
Chintapalli_north	5301.07	2.61	404.70	1157.15	1564.46	0.00	801.53
Chintapalli_south	7797.90	6.13	1908.41	1811.11	3725.65	0.00	730.44
Jerrela	6904.64	0.00	1902.06	1451.37	3353.43	0.00	390.80
Krishnapuram	7951.62	4.82	1204.03	2137.47	3346.32	0.00	1149.06
Lammasingi_north	8131.33	5.49	1340.71	1628.06	2974.26	0.00	535.25
Sarabhannapalem	12473.62	31.07	4443.56	3221.36	7695.99	0.00	881.79
Tajangi	5830.53	0.64	334.71	1672.99	2008.34	0.00	846.50
Wangasara	8587.72	0.00	1398.44	1826.98	3225.42	0.00	1316.19
Total	62978.43	50.76	12936.62	14906.49	27893.87	0.00	6651.56
K.D.PETA Range							
Balaram	18448.74	32.13	2425.23	2794.33	5251.69	0.00	401.06
Bangarammapeta	9284.49	18.01	3760.23	1079.28	4857.52	0.00	198.80
Golugonda	8264.10	2.00	2411.39	1563.12	3976.51	0.00	376.49
K.d.peta	4526.40	0.00	834.55	898.09	1732.64	0.00	81.23
Kakarapadu	5688.94	12.65	2060.99	898.65	2972.29	0.00	153.74
Koyyuru	9238.63	51.79	3949.20	1647.72	5648.71	0.00	374.62
Mampa	8920.02	95.64	4119.06	1464.65	5679.35	0.00	371.94
Total	64371.32	212.22	19560.65	10345.84	30118.71	0.00	1957.88
LOTHUGEDDA Range							
Akkajangi	8253.32	0.00	621.87	1747.92	2369.79	0.00	909.21
Balapam	11687.03	5.80	2734.70	4820.02	7560.52	0.00	1595.75
Cherukumpakalu	5366.17	0.00	946.60	1162.84	2109.44	0.00	624.65
Kokkirapally	8070.14	0.96	557.94	2118.15	2677.05	0.00	815.46
Lothugedda	2966.71	0.00	32.75	452.24	484.99	0.00	621.80
Total	36343.37	6.76	4893.86	10301.17	15201.79	0.00	4566.87
MARRIPAKALA Range							
Cheedipalem	4683.18	11.68	3491.18	621.87	4124.73	0.00	54.00
Doddavaram	6370.64	40.53	4036.66	1462.95	5540.14	0.00	389.13
M.bheevaram	4353.17	341.63	3032.53	326.81	3700.97	0.00	45.36
Marripakala	6023.26	175.86	4230.76	1161.62	5568.24	0.00	272.66
Palakajeedi	6876.24	779.74	4722.36	938.69	6440.79	0.00	248.80
Valugudem	4439.42	395.22	2513.60	876.54	3785.36	0.00	307.87
Total	32745.91	1744.66	22027.09	5388.48	29160.23	0.00	1317.82
NARSIPATNAM Range							
Arlova	8746.20	0.00	592.89	1437.97	2030.86	0.00	222.32
Downuru	5860.88	3.72	2114.61	1401.15	3519.48	0.00	212.07
K.v.puram	11846.38	0.00	385.10	1227.83	1612.93	0.00	264.36
Koduru	15062.42	0.75	1319.29	1708.72	3028.76	0.00	237.74
Kondasantha	11536.11	0.00	1091.00	1089.91	2180.91	0.00	176.24
Kotavuratla	6423.54	1.82	1406.95	1610.15	3018.92	-4.80	411.30
Lammasingi_south	2566.79	0.00	738.33	1392.65	2130.98	0.00	313.43



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Narsipatnam	8042.76	0.00	1568.47	1842.87	3411.34	0.00	326.12
Pedimikonda	18247.77	0.53	807.43	1451.23	2259.19	0.00	301.41
Thadiparthi	5708.13	0.00	1637.26	2549.07	4186.33	0.00	992.81
Vedurupalli	10756.75	87.02	2365.16	1055.69	3507.87	-11.00	87.92
Total	104797.73	93.84	14026.49	16767.24	30887.57	-15.80	3545.72
R.V.NAGAR Range							
G.kothaveedhi	2417.96	11.19	800.58	795.25	1607.02	0.00	341.62
Gudem	4917.35	125.15	2316.12	1180.32	3621.59	0.00	495.65
Lankapakalu	8269.27	97.67	4391.49	2088.17	6577.33	0.00	537.54
Mandapalli	5945.89	293.92	3474.46	1076.99	4845.37	0.00	559.12
Pedavalasa_north	5478.22	1.66	1065.76	935.94	2003.36	0.00	538.28
Pedavalasa_south	5935.79	43.19	2378.54	1393.73	3815.46	0.00	665.76
R.V.Nagar	4118.77	17.73	2082.01	708.48	2808.22	0.00	270.61
Sapparla	7014.35	4.30	3265.67	2066.86	5336.83	0.00	564.44
Total	44097.60	594.81	19774.63	10245.74	30615.18	0.00	3973.02
SILERU Range							
A. Dharakonda	7413.48	11.96	2858.47	1678.29	4548.72	0.00	405.15
Dharakonda	2707.59	2.03	870.36	1107.65	1980.04	0.00	385.58
Duppulawada	3394.00	0.00	744.91	1076.77	1821.68	0.00	609.09
Kondajartha	4166.54	317.88	2655.76	551.72	3525.36	0.00	121.72
Sadigunta	4188.86	92.32	1849.73	1013.72	2955.77	0.00	420.03
Sileru	8116.85	15.19	4414.57	1891.74	6321.50	0.00	366.61
Thokarai	2814.72	137.28	1889.92	432.82	2460.02	0.00	108.31
Total	32802.04	576.66	15283.72	7752.71	23613.09	0.00	2416.49
Grand Total	378136.40	3279.71	108503.06	75707.67	187490.44	-15.80	24429.36

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Division	Narsipatnam
Range	Narsipatnam
Beat	Kotavuratla
Comp	1167
Area-ha	4.8
Class	OF to Scrub
Latitude	17.48939
Longitude	82.70265

35. Paderu Division

Vishakapatnam Circle

Introduction: Paderu Forest Division lies in the north Part of Visakapatnam District between latitudes 17° 55' 48" and 18° 32' 59" N and longitudes 82° 18' 41" and 83° 01' 04" E. The Geographical Area of the Division is 2336.21 km², which is 20.93 % of the geographic area of the District. The Division has two physiographic zones, the plains and Hills. The major rivers falling in the division is Machkund River flowing to north.

Land use pattern of the Division is given in **Table 35.1.**

The division's geology comprises of oldest formation of charnokite series and predominant khondalite group of rocks of Precambrian age. The rocks are essentially Khondalite group with a few charnokite bands, granites, quartzites, calcigranulites, pegmatites. The soil types found in the division are Sandy soils of khondalites and quartzites, Clayey sands of charnockites and granites Black cotton soils come up next having sizeable chunks of area in K.Kotapadu, Devarapalli, Cheedikada, Paderu and Hukumpeta Mandals.

The climate of Paderu division is characterized by high humidity nearly all the year round with oppressive summer and good seasonal rainfall. The climate of the hill parts of the division is different from that of the plain. Altitude varies from 90 M to 1500 M MSL. Temperatures ranging from 10°C to 35°C and the annual rainfall is about 1320mm.

The total population of the Division is 0.29 million (2001 Census) which is 9% of the total population of the district. The per capita forest is 0.33 Ha. The population density is 128 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1011.52. Km², which 43.3% of the total geographical area. Reserved, Protected and Un-classed forests constitute 719.5197Km² (71.1%), 285.2Km² (28.2%) and 6.8Km² (0.006%) of the total forest area respectively.

As per the Champion and Seth's classification Southern tropical semi evergreen forests, Southern tropical secondary moist mixed deciduous forests, southern tropical secondary dry deciduous forests, Tropical dry evergreen scrub southern thorn forests and dry savanna forests.

Protected Area: No protected areas are found in this division.

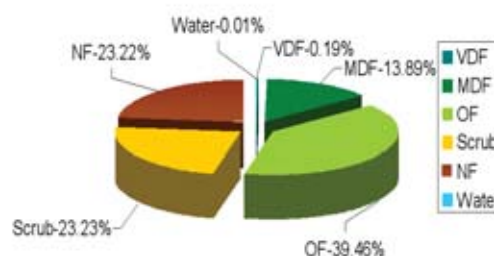
Community Forest Management: There are 303 Vana Samrakshana Samities (VSSs) in the Division. 270.90 Km² forest area, which constitutes 26.65 % of forest area, is under CFM.

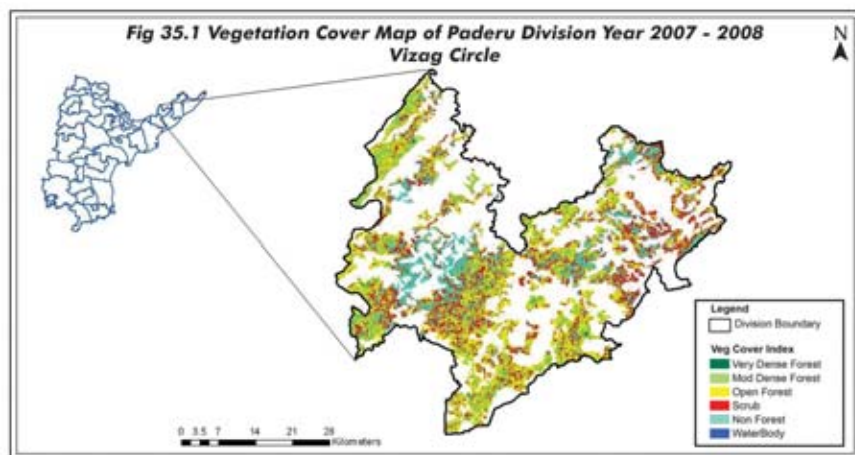
Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008 - Jan 2009), is 541.32 Km², which is 23.17% forest canopy density classes, the Division has 1.91 Km² of Very Dense Forests, 140.50 Km² Moderately Dense Forests and 399.10 Km² Open Forests. The area of the Scrub is 235.03 Km², that of Non-Forest is 234.87 Km² and Water Bodies is 0.11 Km². The distribution of the forest cover of the Division is shown in **Figure 35.1.**

• The **distribution of Forest Cover** in the CFM areas as follows: 0.28 Km² in Very Dense Forests, 48.20 Km² in Moderately Dense Forests and 133.16 Km² in Open Forest. The area of the Scrub is 59.72 Km² and 46.42 Km² in Non-Forest. • **Comparison** of the current forest cover (Satellite data of Dec 2008 - Jan 2009) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007), shows a net loss of 54 Ha forest cover.

Table 35.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	2336.21	
Forest including Scrub	776.52	33.24
Agriculture	532.22	22.78
Land with Scrub	515.51	22.07
Fallow Lands	64.99	2.78
Grasslands	3.27	0.14
Settlements	2.03	0.09
Vegetation outside Forest	348.63	14.92
Water bodies	93.04	3.98





- The forest cover change matrix, given in **Table 35.2** reveals that there has been a decrease of 0.29 Km² of moderately dense forest and 0.25 Km² of open forest.
- The simplified forest cover change matrix is given in **Table 35.3** and **Table 35.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is

stated due to encroachments. • There are **20 Beats** in the division. Negative change in Forest cover is seen in 4 Beats and no change in 16 Beats. Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 35.5**.

Table 35.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	1.91	0.00	0.00	0.00	0.00	0.00	1.91
Moderately Dense Forest	0.00	140.21	0.00	0.04	0.25	0.00	140.50
Open Forest	0.00	0.00	398.85	0.02	0.23	0.00	399.10
Scrub	0.00	0.00	0.00	234.72	0.31	0.00	235.03
Non-Forest	0.00	0.00	0.00	0.00	234.87	0.00	234.87
Water	0.00	0.00	0.00	0.00	0.00	0.11	0.11
Total of 2008	1.91	140.21	398.85	234.78	235.67	0.11	1011.52
Net Change	0.00	-0.29	-0.25	-0.25	0.80	0.00	

Table 35.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	540.97	0.54	0	541.51
Degraded Forest	0	469.90	0	469.90
Water	0	0	0.11	0.11
Total of 2008	540.97	470.44	0.11	1011.52
Net Change	-0.54	0.54	0.00	

Table 35.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

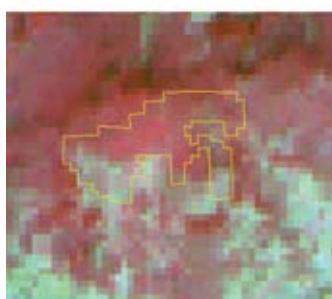
2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008 – Jan 2009)			Total of 2007
	Green	Barren	Water	
Green	776.09	0.43	0	776.52
Barren	0	234.89	0	234.89
Water	0	0	0.11	0.11
Total of 2008	776.09	235.32	0.11	1011.52
Net Change	-0.43	0.43	0.00	

Table 35.5: Beat wise Forest Cover (Area in Ha)

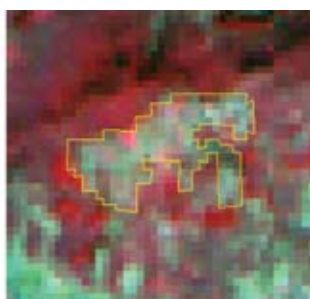
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ARAKU Range							
Araku	8978.36	0.00	164.46	1,149.11	1,313.57	0.00	1,242.59
Arama	5048.57	0.00	242.67	1,234.49	1,477.16	0.00	656.83
Gasaba	5361.54	0.63	144.57	524.91	670.11	0.00	426.50
Guntaseema	3351.75	3.24	499.93	953.15	1,456.32	0.00	325.67
Kandrum	8831.18	2.15	605.02	1,807.36	2,414.53	-7.00	648.97
Madagada	5036.63	0.00	33.95	508.76	542.71	0.00	1,016.95
Mulayagalugu	11443.87	0.00	216.92	1,494.74	1,711.66	-2.56	1,386.16
Paraseela	6813.36	0.00	55.79	546.68	602.47	-13.72	762.79
Sukarametta	4258.25	0.00	41.22	516.92	558.14	0.00	943.10
Total	59123.50	6.02	2004.53	8736.12	10,746.67	-23.28	7409.56
PADERU Range							
Badimela	12011.54	0.53	506.28	2,473.97	2,980.78	0.00	1,720.04
G.madugula	16712.35	24.47	1,742.56	4,467.58	6,234.61	0.00	1,544.59
Kinchumanda	10897.81	1.81	351.07	2,080.42	2,433.30	0.00	1,383.86
Paderu	17228.18	32.36	1,458.35	4,037.04	5,527.75	0.00	1,564.67
Sukuru	20155.81	39.97	1,372.88	4,176.26	5,589.11	0.00	2,068.01
Total	77005.69	99.14	5431.14	17235.27	22,765.55	0.00	8281.17
PEDDABAYULU Range							
Aradakota	21161.97	2.13	928.31	2,534.13	3,464.57	0.00	2,055.01
Busiput	7325.01	0.74	783.69	1,953.84	2,738.27	0.00	567.33
Ginnelakota	15460.18	37.46	1,621.59	2,877.38	4,536.43	0.00	1,710.04
Machipuram	20299.89	45.40	2,455.46	4,076.95	6,577.81	-31.24	1,499.78
Rudakota	7566.02	0.00	41.95	700.31	742.26	0.00	961.26
Sujanakota	25678.73	0.00	783.58	1,795.66	2,579.24	0.00	1,017.46
Total	97491.81	85.73	6614.58	13938.27	20,638.58	-31.24	7810.88
Grand Total	233621.00	190.89	14050.25	39909.66	54,150.80	-54.52	23501.61

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	82.87072
Latitude	18.21187
Area_Ha	13.72
Class	OPEN TO NF
Comp_No	40
Beat	PARASEELA
Range	ARAKU
Division	PADERU



36. Srikakulam Division

Introduction: Srikakulam Forest Division lies in the north eastern part of Andhra Pradesh, between latitudes 18° 05' 01" and 19° 09' 56" N and longitudes 83° 31' 44' and 84° 44' 58" E. The geographical Area of the District is 5953.52 Km². The Division has two physiographic zones, i.e hills and the plains which are known as agency and non agency area. The altitude varies from 300 feet to 5000 feet. The slope is North and North West South and South East. . The Major Rivers are Nagavali and Vamshadhara.

Land use pattern of the division is given in **Table 36.1.**

Table 36.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	5953.52	
Forest including Scrub	677.52	11.38
Agriculture	3561.68	59.83
Land with Scrub	541.12	9.09
Fallow Lands	60.72	1.02
Orchards	321.46	5.4
Settlements	31.55	0.53
Not available for cultivation	523.86	8.8
Rivers/Streams	235.14	3.95

The climate of this Division is generally dry with temperatures ranging from 17° C to 37° C and the annual rainfall is about 1225 mm, received mainly from Southwest monsoons.

Manganese ore, Graphite, lime stone, Iron ore & Mica occur in the division. The soil types found sandy and clayey soils formed due to weathering of underlying rocks granite, gneisses and other allied rocks.

The total population of the Division and district is 2.5 million (2001 Census),The population density is 419 persons per Km². The Per capita forest area is 0.028 ha.

Recorded Forest Area: The total notified forest area of the division is 721.72 km² which is 12.21 % of the geographical area. Reserved, Protected and Un-classed forest constitute 422.45km²(61%), 242.79 Km² (35%) and 21.17 Km² (3%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under South Indian Semi evergreen forests, South Indian Moist deciduous forests

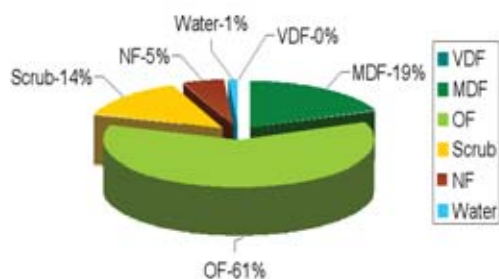
(Mixed, Sal, Hilly savanna), South Indian Dry deciduous(mixed, thorn), South Indian dry evergreen forests(Misc. forests)

Protected Area:No protected areas are found in this division.

Community Forest Management: There are 282 **Vana Samrakshana Samities** (VSSs) in the Division.290.20 Km² forest area, which constitutes 40.21 % of forest area, is under CFM.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 576.56 km², which is 9.7% of the total Geographical area. In terms of the forest canopy density classes, the Division has 134.92 Km² Moderately Dense Forests, and 441.63 Km² Open Forest. The area of the Scrub is 101.79 Km², that of Non-Forest 33.01 Km² and Water Bodies 10.35 Km². The distribution of the forest cover of the Division is shown in **Figure 36.1.**

• The **distribution of Forest Cover** in the CFM areas is as follows:- 41.45 in Moderately Dense Forests, 189.41 Km² in Open Forests. The area of the Scrub is 41.43 Km² in, 15.35 Km² is Non-Forest and 2.53 Km² is Water



bodies. • **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007) shows a net loss of 92.27 Ha forest cover. • The forest cover change change matrix, given in **Table 36.2.** reveals that there has been a decrease of 0.09 Km² of moderately dense forest and 0.83 Km² of open forest.

• The simplified forest cover change matrix is given in **Table 36.3** and **Table 36.4.**

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments.
- There are **43 Beats** in the division. Negative change in Forest cover is seen in only 11 Beats and no change in 32 Beats.
- Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 36.5**.

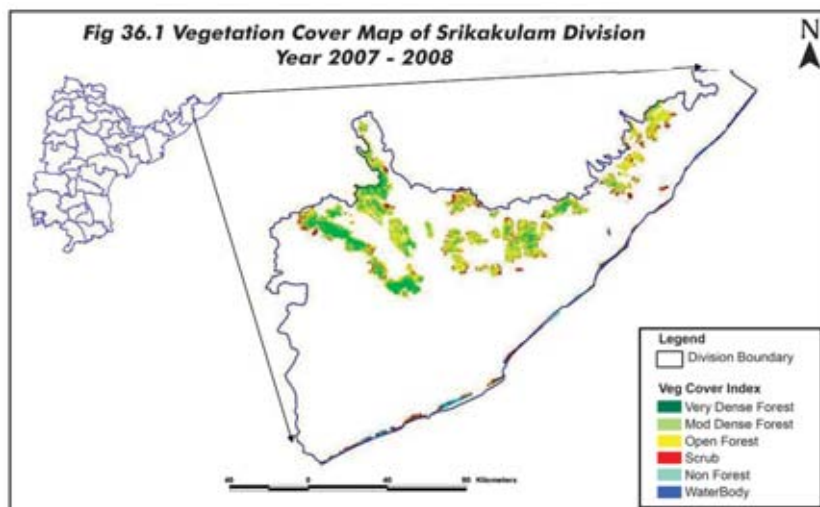


Table 36.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	134.83	0.00	0.00	0.09	0.00	134.92
Open Forest	0.00	0.00	440.80	0.04	0.80	0.00	441.63
Scrub	0.00	0.00	0.00	101.76	0.03	0.00	101.79
Non-Forest	0.00	0.00	0.00	0.00	33.02	0.00	33.02
Water	0.00	0.00	0.00	0.00	0.00	10.35	10.35
Total of 2008	0.00	134.83	440.80	101.80	33.93	10.35	721.72
Net Change	0.00	-0.09	-0.83	0.01	0.092	0.00	

Table 36.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	575.63	0.93	0	576.56
Degraded Forest		134.74	0	134.74
Water	0	0	10.35	10.35
Total of 2008	575.63	135.77	10.35	721.72
Net Change	0.92	-0.93	0	

Table 36.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	677.43	0.09	0	677.52
Barren		33.02	0	33.02
Water	0	0	10.35	10.35
Total of 2008	677.43	33.93	10.35	721.72
Net Change	-0.19	0.19	0	



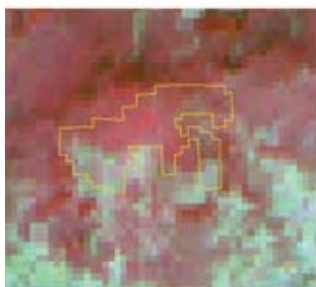
Table 36.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
KASIBUGGA Range						
Baruva	9297.02	0.00	9.99	9.99	0.00	70.55
Bogabanda	5238.06	48.63	650.02	698.65	0.00	96.54
Bogabani	21423.00	187.77	2,446.16	2,633.94	0.00	404.20
Budarsingi	5271.54	40.72	895.07	935.79	0.00	287.93
K.V. Palem	15293.93	0.00	0.00	0.00	0.00	170.20
Makarajola	12364.90	149.88	1,062.78	1,212.66	0.00	550.59
Mandasa	8595.36	19.60	1,433.05	1,452.66	0.00	305.71
Metturu	10765.57	0.00	36.20	36.20	0.00	273.11
Sunkidi	5545.87	2.04	791.87	793.91	0.00	163.94
Total	93795.24	448.65	7,325.14	7,773.79	0.00	2,322.77
PALAKONDA Range						
Antikonda	16602.53	420.10	804.07	1,224.16	-6.67	117.95
Bodlapadu	12027.62	1,066.27	513.52	1,579.79	-20.06	41.90
Burna central	5457.17	517.49	349.20	866.69	0.00	43.22
Burna east	1020.50	316.78	125.45	442.23	0.00	3.38
Burna north	8990.05	683.20	437.50	1,120.70	0.00	24.07
Burna west	3870.94	170.10	266.72	436.81	0.00	164.66
Chinagora	17356.84	546.80	1,496.37	2,043.17	-2.29	377.32
Gudivada	15004.81	626.11	568.60	1,194.71	0.00	43.66
Kadagandi east	13978.03	340.44	1,022.15	1,362.59	-36.20	90.38
Kadagandi west	13906.12	811.32	470.25	1,281.57	0.00	19.90
Palakonda	38320.77	450.97	1,334.13	1,785.10	0.00	296.69
Tankidi	5747.73	920.74	954.89	1,875.63	-3.62	8.95
Total	152283.09	6,870.31	8,342.83	15,213.14	-68.84	1,232.10
PATHAPATNAM Range						
Antharaba	10706.48	251.84	1,729.54	1,981.37	-2.97	244.75
Bagga	7932.61	759.68	3,094.36	3,854.04	0.00	286.59
Baleru	12297.66	741.29	2,655.81	3,397.10	-0.61	256.74
Jadupalli	19495.47	693.46	2,570.49	3,263.94	0.00	394.24
Korada	19996.15	799.24	3,474.60	4,273.83	-0.20	84.01
POlavaram	6063.42	1,305.91	1,640.88	2,946.79	0.00	46.61
Rugada	11639.75	146.66	2,327.73	2,474.40	-0.60	708.19
Saravakota	23641.62	73.31	1,967.55	2,040.85	0.00	468.76
Sudiraikonda'	13057.18	381.53	3,009.94	3,391.48	0.00	367.97
Temburu	6696.43	200.46	1,986.01	2,186.47	-1.35	330.75
Total	131526.77	5,353.37	24,456.90	29,810.27	-5.73	3,188.60
SRIKAKULAM Range						
Balarampuram	2294.25	0.00	0.00	0.00	0.00	207.01
Dharmavaram	34218.99	0.00	145.73	145.73	0.00	566.47
Kalingapatnam	3950.21	0.00	87.01	87.01	0.00	261.02
Kotapalem	16502.72	0.00	60.22	60.22	0.00	458.66

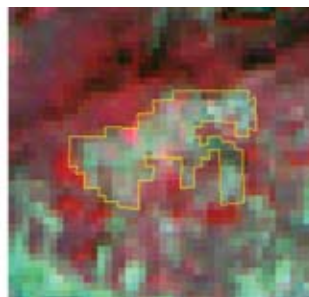
Kuppili	47407.45	0.00	0.78	0.78	0.00	91.11
Machilesam	7877.28	0.00	9.43	9.43	0.00	95.34
Vatsavalasa	4415.88	0.00	34.04	34.04	0.00	59.54
Total	116666.78	0.00	337.20	337.20	0.00	1,739.15
TEKKALI Range						
Amalapadu	7171.06	0.00	104.51	104.51	0.00	499.01
Ampalam	43879.67	0.00	37.35	37.35	0.00	477.63
Mulapeta	11894.81	0.00	7.76	7.76	0.00	240.41
Narsingapalli	8101.74	747.48	2,905.22	3,652.71	-17.70	361.68
Sariapalli	30033.35	70.66	682.17	752.84	0.00	106.27
Total	101080.63	818.15	3,737.02	4,555.16	-17.70	1,685.01
Grand Total	595352.51	13,490.47	44,199.09	57,689.56	-92.27	10,167.63

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	83.902910
Latitude	18.568606
Area	14 Ha.
Change	OF TO NF
Compartment No.	161
Beat	Kadagandi east
Range	Palakonda
Division	Srikulam

Wildlife in AP Forests



37. Vizianagaram Division

Introduction: Vizianagaram Forest Division lies in the north eastern part of Andhra Pradesh, between latitudes 17° 52' 32" and 19° 09' 39" N and longitude 83° 00' 00" and 83° 49' 11" E. The Geographical Area of the Division is 6261.64 Km². The Division has two physiographic zones, the plains and Hills. The major rivers in the district are nagavali, Vegavathi, Gomuki and Suvarnamukhi. **Land use pattern** of the division is given in **Table**

Table 37.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	6261.64	
Forest including Scrub	1187.91	18.97
Agriculture	3244.78	51.82
Land with Scrub	777.07	12.41
Fallow Lands	23.79	0.38
Grasslands	0.63	0.01
Settlements	25.67	0.41
Not available for cultivation	869.74	13.89
Rivers/Streams	132.12	2.11

37.1.

The climate of this district is characterized by high humidity nearly all the year round with oppressive summer and good seasonal rainfall. The climate of the hill parts of the district is different from that of the plain. The **temperature** varies from 17.1°C to 39.6°C. The main soils in the district are Red soils, Sandy loams and Sandy clay and they constitute 96 % of the total area. The soils in the district are predominantly loamy with medium fertility. There are mostly red loamy soils, as far as dry lands are concerned and clay loamy in case of wet lands. The normal rainfall of

the district for the year is 1,131 mm. The district gets the benefit of both the South West and North- East monsoon. The total population of the Division and District is 2.2 million as per 2001 census and the per capita forest is 0.053 Ha. The population density is 344 persons per Km².

Recorded Forest Area: The total Notified forest of the division is 1219.28 Km² which is 18.24% of the total geographical area. Reserved, Protected and unclassified forests constitute 716.27km² (60%), 420.10 km² (35.2%) and 56.66km² (0.047%) of the total forest area respectively.

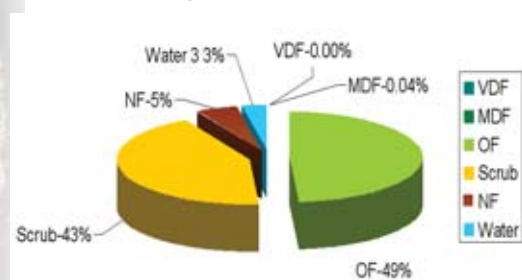
As per the Champion and Seth's classification floristic composition of the forests of the district are falling under Southern tropical moist mixed deciduous forests, Northern tropical dry deciduous forests, Southern tropical dry mixed deciduous forests. Dry evergreen forests.

Protected Area: No protected areas are found in this division.

Community Forest Management: There are 265 **Vana Samrakshana Samitites** (VSSs) in the Division. 305.59 Km² forest area, which constitutes 25% of forest area, is under CFM.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 1127.9Km², which is 18% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.03Km² Very Dense Forests, 601.90 Km² Moderately Dense Forests, and 525.97 Km² Open Forest. The area of the Scrub is 60.04 Km², that of Non-Forest is 30.90 Km² and Water Bodies is 0.44 Km². the distribution of the forest cover of the Division is shown in **Figure 37.1**.

• The **distribution of Forest Cover** in the CFM areas is as follows:- 168.67Km² in Moderately Dense Forests, 114.38 Km² in Open Forests The area of the Scrub is 13.06 Km², 9.45 Km² is Non-Forest and 0.02 Km² is Water



bodies. • **Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007), shows a net loss of 471 Ha forest cover. • The **forest cover change matrix**, given in **Table 37.2** reveals that there has been a decrease of 3.83 Km² of moderately dense forest and 0.88 Km² of open forest. • The **simplified forest cover change matrix** is given in **Table 37.3** and **Table 37.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations.

- There are **49 Beats** in the division. Negative change in Forest cover is seen in 18 Beats and no change in 31 Beats. Beat wise forest cover in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 37.5**.

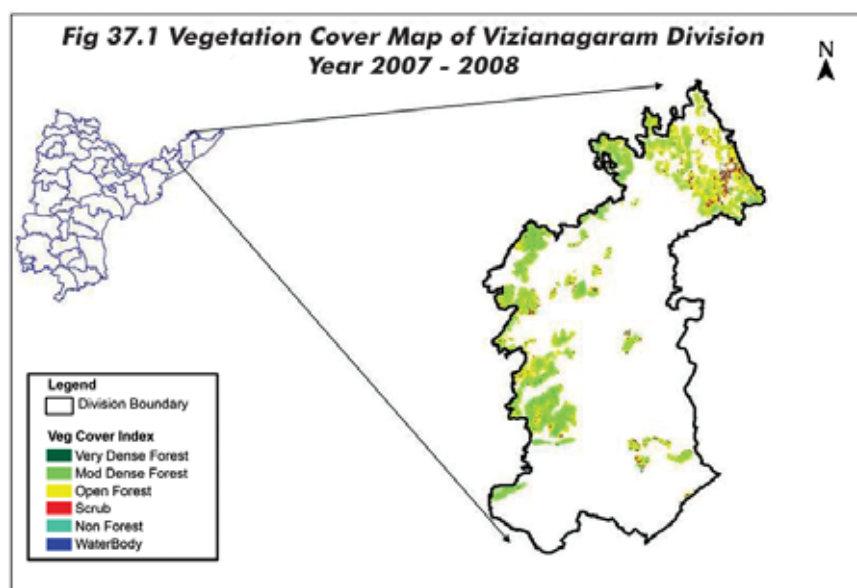


Table 37.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.03	0.00	0.00	0.00	0.00	0.00	0.03
Moderately Dense Forest	0.00	598.07	0.17	1.76	1.90	0.00	601.90
Open Forest	0.00	0.00	524.93	0.34	0.71	0.00	525.97
Scrub	0.00	0.00	0.00	59.63	0.41	0.00	60.04
Non-Forest	0.00	0.00	0.00	0.00	30.90	0.00	30.90
Water	0.00	0.00	0.00	0.00	0.00	0.44	0.44
Total of 2008	0.03	598.07	525.09	61.73	33.92	0.44	1219.28
Net Change		-3.83	-0.88	1.69	3.02	0.00	0.00

Table 37.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1123.19	4.71	0	1127.90
Degraded Forest		90.94	0	90.94
Water	0	0	0.44	0.44
Total of 2008	1123.19	95.65	0.44	1219.28
Net Change	-4.71	4.71	0	

Table 37.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1184.89	3.02	0	1187.91
Barren		30.90	0	30.90
Water	0	0	0.44	0.44
Total of 2008	1184.89	33.92	0.44	1219.28
Net Change	-3.02	3.02	0	

Table 37.5: Beat wise Forest Cover (Area in Ha)

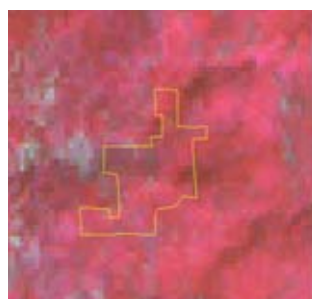
Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
KURUPAM Range							
Arnada	11887.07	0.00	1,841.79	3,334.85	5,176.64	-1.45	218.28
Bori	10920.92	0.00	299.27	477.62	776.89	0.00	79.77
Bothili	4543.31	0.00	222.24	1,000.99	1,223.23	-1.5	109.56
Darsini	1863.20	0.00	177.53	702.94	880.47	0.00	51.05
Elwinpeta	8291.10	0.00	395.10	2,039.35	2,434.45	-1.93	237.23
Gorada	6236.81	0.00	1,375.72	2,379.33	3,755.05	0.00	186.34
Kedaripuram	5883.64	0.00	425.55	709.75	1,135.30	0.00	48.46
Kurupam	5927.74	0.00	997.12	830.82	1,827.94	0.00	57.67
Manda	7191.37	0.00	1,071.13	1,214.56	2,285.69	0.00	41.11
Mondemkhall	7785.11	0.00	362.08	3,139.37	3,501.44	-6.31	1,065.44
Neelakantapuram	3996.39	0.00	1,057.33	1,072.02	2,129.35	0.00	17.01
Panasabadra	9946.81	0.00	1,940.60	3,642.87	kurupam	-3.26	680.29
Total	84473.46	0.00	10,165.46	20,544.46	30,709.92	-14.45	2,792.21
PARVATHIPURAM Range							
Bobbili	31478.32	0.00	1,537.12	761.18	2,298.30	-9.19	148.34
Goipaka	2423.58	0.00	767.79	1,035.10	1,802.89	0.00	65.32
Gutchimi	24414.10	0.00	278.59	626.78	905.37	0.00	101.23
Masimanda	16977.17	0.64	6,390.32	2,699.22	9,090.18	-7.36	147.66
Parvathipuram (n)	12760.20	0.00	826.38	218.12	1,044.50	-48.51	10.63
Parvathipuram south	25207.52	0.00	1,655.45	272.33	1,927.78	-18.82	47.05
Poram	4948.29	0.00	401.93	412.41	814.34	0.00	29.29
Pujariguda	12877.63	0.00	1,916.18	2,282.87	4,199.05	0.00	102.92
Saluru (e)	16835.29	0.00	1,069.60	841.57	1,911.17	-15.68	36.50
Shikarganj	21646.73	0.00	609.29	743.21	1,352.50	-43.52	167.34
Total	169568.84	0.64	15,452.64	9,892.79	25,346.07	-143.08	856.28
SALUR Range							
Butchampadu	1336.66	0.00	437.87	660.77	1,098.64	0.00	79.34
Duggeru	11347.58	2.46	4,704.40	1,888.21	6,595.07	-163.74	201.30
Kankanapalli	6183.56	0.00	1,904.22	1,782.00	3,686.21	0.00	150.35
Kesali	1101.38	0.00	234.04	325.99	560.04	0.00	12.24
Kurukutti	12208.87	0.00	1,586.23	1,286.11	2,872.33	0.00	90.05
Makkuva	12425.04	0.00	523.17	278.72	801.89	-4.54	57.45
Mothumuru	17681.28	0.00	2,013.29	3,460.05	5,473.34	0.00	206.78
Pachipenta	2599.60	0.00	284.38	219.16	503.54	-5.2	18.92
Saluru	15742.32	0.00	981.53	1,721.51	2,703.04	0.00	250.61
Thonam	10654.38	0.00	2,502.03	934.83	3,436.86	-11.03	42.81
Total	80626.28	2.46	15,171.16	12,557.34	27,730.96	-184.51	1,109.85
VIZIANAGARAM Range							
Andra	17829.37	0.00	1,053.99	472.17	1,526.16	0.00	49.05
Bhimaram	6791.92	0.00	2,073.19	763.58	2,836.77	-65.92	35.22
Damarasingi	64669.53	0.00	314.50	629.95	944.45	0.00	170.75

Forest division-wise results

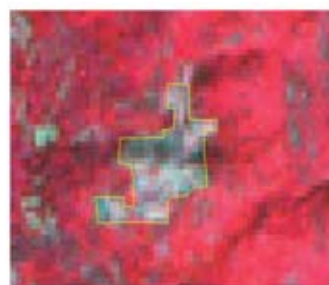
Gantikonda	9216.95	0.00	747.80	37.56	785.37	0.00	0.43
Kancheru	2313.10	0.00	1,105.66	415.03	1,520.69	-47.53	10.70
Konada	31988.90	0.00	0.00	132.28	132.28	0.00	91.71
Kothapalem	7983.19	0.00	2,061.14	904.93	2,966.07	0.00	113.81
Kumili	8081.31	0.00	843.64	562.17	1,405.81	0.00	89.71
L. Gunnala	18733.25	0.00	595.52	170.40	765.92	0.00	3.62
Pallapugudaba	23828.11	0.00	1,312.72	169.84	1,482.56	0.00	9.00
Pedakonela	7284.10	0.00	3,019.91	2,099.55	5,119.46	-15.22	132.47
Poolbagh	29415.50	0.00	323.72	521.24	844.96	0.00	217.48
Rabha	13052.87	0.00	1,608.20	747.65	2,355.85	0.00	42.28
Rompilli	3050.10	0.00	1,109.28	367.27	1,476.55	0.00	32.69
Sariapalli	4117.52	0.00	1,680.18	984.96	2,665.13	0.00	56.14
Velgada	11420.80	0.00	248.15	444.06	692.22	0.00	164.81
Venkayyapalem	31743.73	0.00	1,308.85	182.32	1,491.17	0.00	26.74
Total	291520.27	0.00	19,406.46	9,604.95	29,011.41	-128.67	1,246.62
Grand Total	626188.86	3.10	60,195.71	52,599.55	112,798.37	-470.71	6,004.96

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	83.20044
Latitude	18.28414
Area_Ha	16
Class	DENSE TO NF
Comp_No	320
Beat	BHIMARAM
Range	VIZIANAGARAM
Division	VIZIANAGARAM



38. Vishakapatnam Division

Introduction: Vishakapatnam Forest Division lies in the South of Visakapatnam, between latitudes 17° 15' 00" and 18° 26' 25" N and longitudes 82° 31' 04" and 83° 27' 40" E. The Geographical Area of the Division is 5069.78 km², which is 45 % of the total geographical Area of the District. The Division has two physiographic zones, the plains and Hills. The major rivers falling in the division are Thadava, varaha and sharada. **Land use pattern** of the Division is given in **Table 38.1**.

Table 38.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	5069.78	
Forest including Scrub	1162.63	22.93
Agriculture	2085.90	41.14
Land with Scrub	495.36	9.77
Fallow Lands	407.97	8.05
Grasslands	0.49	0.01
Settlements	78.09	1.54
Vegetation outside Forest	616.29	12.16
Waterbodies	223.05	4.40

There are three major soil types in the Division. These are Sandy soils and Clayey sands of and granites and Coastal dune sand dunes of quartzite's..

The climate of Vishakapatnam Division is characterized by high humidity nearly all the year round with oppressive summer and good seasonal rainfall. The climate of the hill parts of the division is different from that of the plain. Altitude varies from 90 M to 1500 M MSL. Temperatures ranging from 10° C to 35°C and the annual rainfall is about 1202mm. received mainly from Southwest and Northeast monsoons.

The total **population** of the Division is 3.05 million (2001 Census), which is 79% of the total population of the district. The per capita forest is 0.04 Ha. The population density of the division is 603 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1266.09 Km², which 25% of the total geographical area. Reserved- Protected and Unclassed Forests Constitute 586.6Km² (46%), 678.65Km² (53%) and 0.74Km² (0.06%) of the total forest area respectively.

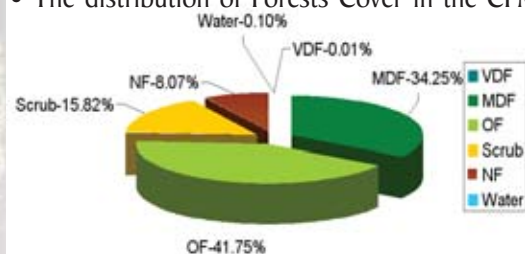
As per the Champion and Seth's classification, the division types are Southern tropical semi evergreen forests, Southern tropical secondary moist mixed deciduous forests, southern tropical secondary dry deciduous forests, Tropical dry evergreen scrub southern thorn forests and dry savanna forests.

Protected Area: Out of 1266.10 Km² of the forest area of the Division one Wild Life Sanctuary named Kambalakonda of area of 70.70 Km² exists. Which is large and sprawling greenery around the Vizag City harbouring diverse flora & fauna?

Community Forest Management: There are 321 Vana Samrakshana Samities (VSSs) in the Division. 271.93 Km² forest area, which constitutes 21 % of forest area, is under CFM.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Nov 2008 - Dec 2008), is 962.39 Km², which is 19% of the total Geographical area. In terms of the forest canopy density classes, the Division has 0.15 Km² of Very Dense Forests, 433.56 Km² Moderately Dense Forests, and 528.56 Km² Open Forests. that of The area of the Scrub is 200.47 Km², Non-Forest is 102.13 Km² and Water Bodies is 1.23 Km². The distribution of the forest cover of the division is shown in **Figure 38.1**.

- The distribution of Forests Cover in the CFM areas as follows:- 103.03 Km² Moderately Dense Forests, 114.26 Km² in Open Forests. The area of the Scrub is 34.92 Km², 19.30 Km² is Non-Forest and 0.22 Km² is water bodies.



- Comparison** of the current forest cover (Satellite data of Nov 2008 - Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007 - Dec 2007), shows a net loss of 139 Ha forest cover.

- The **change matrix**, given in **Table 38.2** reveals that there has been a decrease of 0.79Km² of moderately dense forest

and 0.60Km² of open forest.

- The **simplified forest cover change matrix** is given in **Table 38.3** and **Table 38.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments.

- There are **40 Beats** in the division. Negative change in Forest cover is seen in 10 Beats and no

change in 30 Beats. Beat wise for changes compared to 2007 assessment is given in **Table 38.5**.

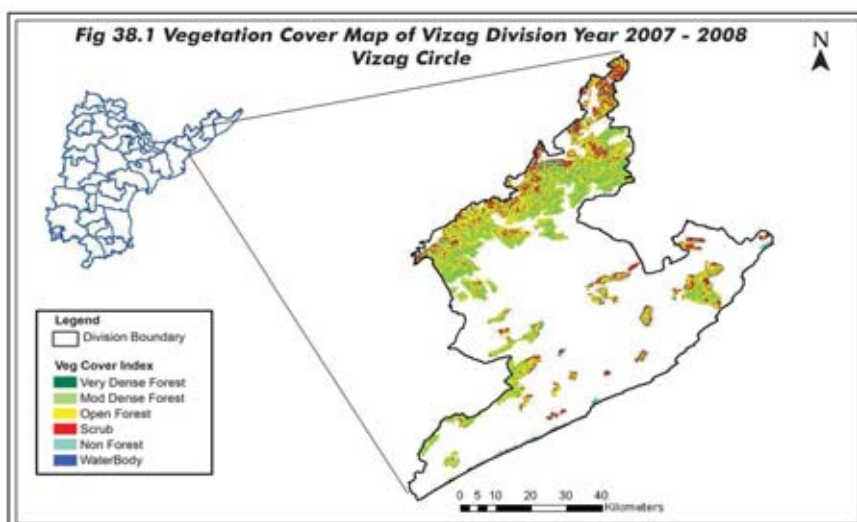


Table 38.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Nov 2008 – Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.15	0.00	0.00	0.00	0.00	0.00	0.15
Moderately Dense Forest	0.00	432.77	0.00	0.04	0.75	0.00	433.56
Open Forest	0.00	0.00	527.96	0.02	0.58	0.00	528.56
Scrub	0.00	0.00	0.00	200.47	0.00	0.00	200.47
Non-Forest	0.00	0.00	0.00	0.00	102.13	0.00	102.13
Water	0.00	0.00	0.00	0.00	0.00	1.23	1.23
Total of 2008	0.15	432.77	527.96	200.53	103.46	1.23	1266.10
Net Change	0.00	-0.79	-0.60	0.06	1.33	0.00	

Table 38.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	960.88	1.39	0	962.27
Degraded Forest	0	302.60	0	302.60
Water	0	0	1.23	1.23
Total of 2008	960.88	303.99	1.23	1266.10
Net Change	-1.39	1.39	0	0

Table 38.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007 - Dec 2007)	2008 (Data of Nov 2008 – Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1161.41	1.33	0	1162.74
Barren	0	102.13	0	102.13
Water	0	0	1.23	1.23
Total of 2008	1161.41	103.46	1.23	1266.10
Net Change	-1.33	1.33	0.00	



Table 38.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ANANTHAGIRI Range							
Ananthagiri	8119.41	0.00	318.29	1,011.91	1,330.20	-13.73	851.50
Bondam	2274.93	0.00	45.16	671.21	716.37	-15.15	462.75
Borra	2460.32	0.00	79.22	573.84	653.06	0.00	378.71
Chintalapudi	3438.31	0.00	1,251.85	741.84	1,993.69	0.00	74.11
Dabbagunta	3462.80	0.00	1,794.43	1,117.85	2,912.28	-19.59	126.82
Iragai	1124.59	0.00	7.40	412.23	419.63	0.00	479.23
Kasipatnam	3576.35	0.00	1,418.32	513.26	1,931.58	-4.50	38.99
Kuridi	4462.74	0.00	1,337.31	1,678.91	3,016.22	0.00	271.89
Lotheru	2303.93	0.00	79.34	804.53	883.87	0.00	480.07
Medaparthu	10165.72	0.00	1,824.69	3,276.62	5,101.31	-13.83	1,088.79
Moduga	3191.16	0.00	60.67	1,104.96	1,165.63	-10.49	910.82
Polamguda	2366.52	0.00	6.78	330.23	337.01	0.00	274.65
Sontivanipalem	1065.15	0.00	407.08	237.63	644.71	0.00	30.98
Total	48011.93	0.00	8630.54	12475.02	21105.56	-77.29	5469.31
CHODAVARAM Range							
(z)Kottapatnam	34208.78	0.00	2,463.64	2,210.18	4,673.82	0.00	511.11
Jeenabadu	12694.69	1.10	4,471.67	2,949.17	7,421.94	0.00	440.28
Kasipuram	15680.22	2.15	3,017.19	3,476.76	6,496.10	0.00	1,163.55
Kinthali	14618.13	0.52	3,277.65	2,105.82	5,383.99	0.00	381.74
Konam	12043.28	1.79	1,697.68	3,710.32	5,409.79	0.00	1,250.41
Madugula	13145.40	0.00	2,880.69	2,696.60	5,577.29	0.00	416.35
Minimuluru	9066.86	0.00	2,088.69	4,241.31	6,330.00	-26.73	990.78
Tattapudi	17530.44	4.75	3,134.77	3,354.14	6,493.66	-21.42	1,948.12
Thenugupudi	23120.56	0.00	1,576.06	1,080.76	2,656.82	0.00	143.51
Total	152108.36	10.31	24608.04	25825.06	50443.41	-48.15	7245.85
VISHAKHAPATNAM Range							
Advanipalem	6820.54	0.00	93.97	729.41	823.38	0.00	548.99
Amanam	2621.11	0.00	1.39	93.41	94.80	0.00	219.65
Duvvada	17428.53	0.00	339.87	573.64	913.51	0.00	450.36
Kannurupalem	13362.38	0.00	1,294.74	2,033.46	3,328.20	0.00	692.54
Mudasarlova	12374.71	0.00	1,531.59	1,797.58	3,329.17	-4.90	569.55
Nallakonda	34162.57	0.00	236.75	952.89	1,189.64	0.00	742.10
Pangidi	36373.07	0.00	652.06	889.62	1,541.68	0.00	582.48
Paradasipalem	8555.54	0.00	554.38	1,035.17	1,589.55	0.00	381.37
Parawada	32230.86	0.00	40.34	220.92	261.26	0.00	407.93
Pothukonda	9914.66	0.00	203.05	891.95	1,095.00	0.00	409.85
Pudimadaka	23333.15	0.00	0.00	0.00	0.00	0.00	25.72
Sontyam	18813.31	0.00	86.46	278.96	365.42	0.00	115.99
Yendada	7183.54	0.00	604.42	991.36	1,595.78	-7.60	242.10
Total	223173.97	0.00	5639.02	10488.37	16127.39	-12.50	5388.63

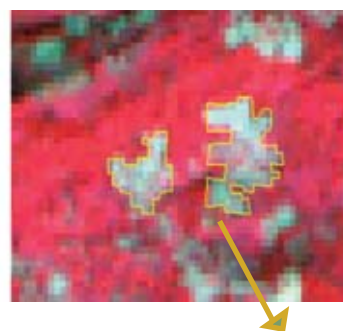
YELAMANCHILI Range							
Ellamanchili	6467.42	0.76	762.34	870.10	1,633.20	0.00	182.13
Panchadarla	21060.78	0.00	26.57	557.58	584.15	0.00	755.77
Payakaraopet	14123.26	4.27	1,113.55	355.54	1,473.36	0.00	97.71
Rebaka	23630.38	0.00	1,770.14	1,259.43	3,029.57	0.00	521.15
Regupalem	18402.89	0.00	804.85	1,024.49	1,829.34	0.00	386.52
Total	83684.73	5.03	4477.45	4067.14	8549.62	0.00	1943.28
Grand Total	506978.99	15.34	43355.05	52855.59	96225.98	-137.94	20047.07

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



Longitude	83.06270
Latitude	18.14084
Area_Ha	4.07
Class	OPEN TO NF
Comp_No	510
Beat	MEDAPARTHY
Range	ANANTHAGIRI
Division	Visakhapatnam



Longitude	83.06681
Latitude	18.14126
Area_Ha	8.26
Class	OPEN TO NF
Comp_No	510
Beat	MEDAPARTHY
Range	ANANTHAGIRI
Division	Visakhapatnam



Kambalakonda Forest



39. Karimnagar East Division

Introduction: Karimnagar East Forest Division lies in the Eastern Part of Karimnagar District, between latitudes 18° 20' 53" and 18° 52' 14" N and longitudes 79° 10' 48" and 80° 20' 44" E. The Geographical Area of the Division is 3,814 Km², which is 32.25% of the geographical area of the district. This region lies on Deccan Plateau. The River Godavari forms Northern and Eastern boundary of the Division as well as the District. Godavari and Maneru are main rivers of Karimnagar East Division. The major irrigation project of the district is the Sriramsagar reservoir project, which covers 35 mandals in the district.

Table 39.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3814	
Forest including Scrub	1333.62	34.97
Agriculture	1292.93	33.90
Land with Scrub	314.00	8.23
Fallow Lands	217.32	5.70
Settlements	32.87	0.86
Vegetation outside Forest	548.56	14.38
Water body	74.65	1.96

Land use pattern of the Division is given in **Table 39.1**.

The climate of this Division is generally dry with temperatures ranging from 9°C to 50°C and the annual rainfall is about 756 mm, received mainly from Southwest monsoons.

The soil types found mainly are Black cotton, Sandy loam, Alluvial, Lateritic with less humus in top layer.

The total population of the Division is 0.96 million (2001 Census), which constitutes 27.5% of the district population.

The Per capita forest area is 0.14 ha. The population density

is 252 persons per Km². The Literacy rate of the division is 56%.

Recorded Forest Area: The total notified forest area of the Division is 1,432.1 Km², which is 37.55% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 1,382.13 Km² (96.51%), 27.43 Km² (1.913%) and 22.54 Km² (1.573%) of the total forest area respectively.

As per Champion and Seth's classification the Forests of Division fall under Tropical dry deciduous and Tropical Thorn Forest types consisting of mixed teak and miscellaneous type of corporation.

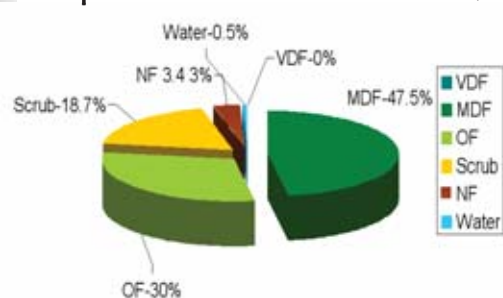
Protected Area: The Division is one of the two constituent Divisions of Sivaram Wildlife Sanctuary. Out of 1,386.81 Km² of forest area, 19.15 Km² is included in Sivaram WLS.

Community Forest Management: There are 127 **Vana Samrakshana Samities** (VSSs) in the Division. 314.05 Km² forest area, which constitutes 21.93 % of forest area.

Forest Cover: The forest cover in the Division based the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 1,072.8 Km², which is 28.13% of the total Geographical area. In terms of the forest canopy density classes, the Division has 658.16 Km² of Moderately Dense Forests and 414.62 Km² of Open Forests. The area of the Scrub is 259.44 Km², Non-Forest 48.33 Km² and Water Bodies 6.26 Km². The distribution of the forest cover of the division is shown in **Figure 39.1**.

- The **distribution of Forest Cover** in the JFM/CFM is as follows: 113.72 Km² in Moderately Dense Forests & 111.89 Km² in Open Forests, Scrub is 78.49 Km², 8.71 Km² is Non-Forests and 1.22 Km² Water bodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite



Imagery of Oct 2007 - Dec 2007), shows a net loss of 216.45 Ha of forest cover during the period of one year.

- The **change matrix**, given in **Table 39.2** reveals that there has been a decrease of 0.76 Km² of moderately dense forest and 1.40 Km² of open forest.

- The simplified forest cover change matrix is given in **Table 39.3** and **Table 39.4**.

- On the basis of ground truthing conducted by the officers of

the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and partly due to pollarding for rearing silk worms.

- There are **78 beats** in the division. Negative change in forest cover is seen in only 19 beats and no change in 59 beats.

- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 39.5**.

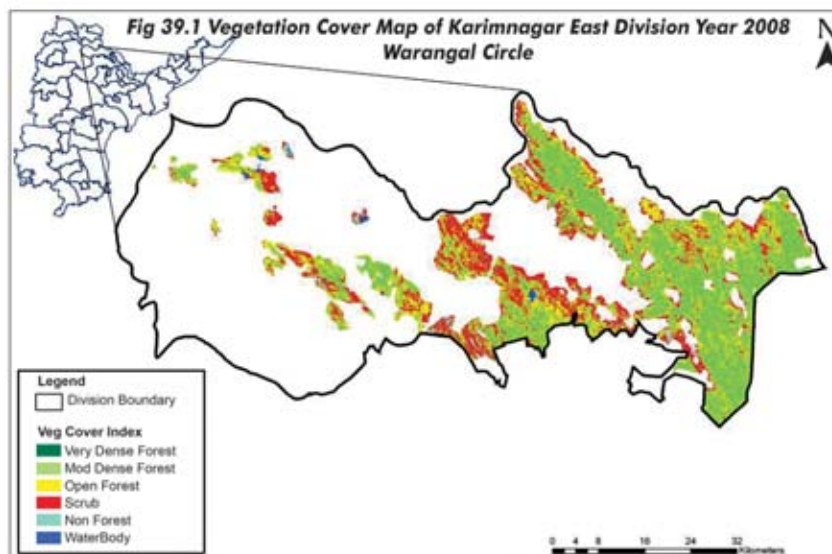


Table 39.2: Forest Cover change matrix

(Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	658.16	0.00	0.39	0.37	0.00	658.92
Open Forest	0.00	0.00	414.62	0.44	0.96	0.00	416.02
Scrub	0.00	0.00	0.00	258.61	0.11	0.00	258.72
Non-Forest	0.00	0.00	0.00	0.00	46.89	0.00	46.89
Water	0.00	0.00	0.00	0.00	0.00	6.26	6.26
Total of 2008	0.00	658.16	414.62	259.44	48.33	6.26	1386.81
Net change	0.00	-0.76	-1.40	0.72	1.44	0.00	0.00

Table 39.3: Forest Cover change matrix (Good and Degraded Forest)

(Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1072.78	2.16	0	1074.94
Degraded Forest	0	305.61	0	305.61
Water	0	0	6.26	6.26
Total of 2008	1072.78	307.77	6.26	1386.81
Net Change	-2.16	2.16	0	

Table 39.4: Forest Cover change matrix (Rejuvenation and Barren)

(Area in Km²)

2007 (Data of Oct 2007 – Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1332.22	1.44	0	1333.66
Barren	0	46.89	0	46.89
Water	0	0	6.26	6.26
Total of 2008	1332.22	48.33	6.26	1386.81
Net Change	1.44	1.44	0	



Table 39.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
AZAMNAGAR Range							
Azamnagar	2632.4	0.00	1,089.92	345.17	1,435.09	-1.35	195.3
Borlaguda	1755.42	0.00	882.19	423.8	1,305.99	-39.81	64.27
Erraram	2142.48	0.00	219.69	377.55	597.24	-40.35	464.58
Kanakanoor	2514.76	0.00	1,320.46	425.46	1,745.92	-3.80	151.73
Khammampally	4221.9	0.00	2,958.35	821.58	3,779.93	0.00	183.49
Mutharam	2257.46	0.00	274.41	477.23	751.64	-32.62	808.46
Nandigoan	4189.78	0.00	504.94	197.65	702.59	-8.57	396.05
Pegadapally	4570.32	0.00	3,460.51	585.74	4,046.25	-9.16	181.06
Polaram	2089.85	0.00	188.23	467.52	655.75	-7.03	525.92
Reddypally	3416.03	0.00	2,205.57	859.96	3,065.53	-2.13	229.33
Singaram	6120.94	0.00	4,444.02	1,055.49	5,499.51	0.00	187.21
Total	35911.33	0.00	17,548.30	6,037.15	23,585.45	-144.82	3,387.40
BHUPALPALLY Range							
Bhupalpally	1208.7	0.00	759.28	332.9	1,092.18	0.00	81.25
Edlapally	4020.85	0.00	446.99	580.41	1,027.40	0.00	569.82
Gorlaveedu	3627.42	0.00	576.74	525.98	1,102.72	0.00	657.33
Kasimpally	970.55	0.00	646.15	250.87	897.01	0.00	59.07
Mallaram	5697.67	0.00	1,113.08	1,399.38	2,512.47	-6.78	1,036.43
Medipally	1756.42	0.00	307.64	825.3	1,132.94	-3.00	472.91
Mulugupally	3715.14	0.00	499.81	983.55	1,483.37	0.00	713.45
Rudraram	4643.07	0.00	139.28	881.12	1,020.40	0.00	951.79
Shatrajpally	2052.64	0.00	463.67	531.9	995.57	0.00	604.29
Tadicherla	4186.89	0.00	56.85	296.26	353.11	0.00	666.73
Toondla	4659.52	0.00	1,311.30	661.82	1,973.13	0.00	274.85
Vallamkunta	2350.22	0.00	9.35	36.35	45.7	0.00	39.17
Total	38889.08	0.00	6,330.16	7,305.84	13,636.00	-9.78	6,127.09
CHINTAKANI Range							
Chintakani	7137.78	0.00	900.25	458.47	1,358.72	0.00	232.02
Ethnaram	2958.39	0.00	1,892.54	391.8	2,284.34	0.00	112.5
Khamanpally	3911.73	0.00	2,452.71	1,067.35	3,520.06	0.00	390.36
Lenkalagadda	3209.88	0.00	924.84	962.29	1,887.12	0.00	401.87
Lingapur	2417.6	0.00	1,405.08	420.13	1,825.20	0.00	92.65
Muknoor	2973.7	0.00	1,679.60	216.69	1,896.29	0.00	68.29
Neelampally	3011.54	0.00	1,956.71	434.44	2,391.15	0.00	127.59
Nimmaguda	3729.4	0.00	2,141.24	865.87	3,007.11	0.00	338.48
Pankena	4584.95	0.00	1,989.04	1,461.25	3,450.29	0.00	295.27
Panmalla	3893.03	0.00	669.77	1,231.71	1,901.48	0.00	591.93
Peddampet	2190.43	0.00	1,106.19	804.26	1,910.45	0.00	279.73
Sarvaipet	2924.27	0.00	962.91	674.96	1,637.87	0.00	154.73
Singampally	3086.76	0.00	2,197.58	430.08	2,627.65	0.00	158.54
Yamanpally	2256.37	0.00	1,249.31	434.29	1,683.60	0.00	171.49
Total	48285.85	0.00	21,527.75	9,853.58	31,381.33	0.00	3,415.44

MAHADEVPUR Range							
Annaram	2559.97	0.00	620.48	482.39	1,102.87	0.00	480.12
Beerasagar	3321.97	0.00	1,463.29	438.07	1,901.36	0.00	177.79
Damarakunta	4778.53	0.00	255.27	793.44	1,048.71	-15.14	451.58
Elkeshwar	6715.7	0.00	1,028.34	371.81	1,400.15	0.00	143.23
Gummallapally	7101.03	0.00	1,157.74	766.96	1,924.71	0.00	808.94
Heerapur	3199.27	0.00	957.65	489.76	1,447.42	0.00	301.96
Kaleshwar	2966.93	0.00	872.1	517.52	1,389.62	0.00	182.19
Kataram	1299.47	0.00	431.86	76.35	508.21	0.00	54.78
Kudurupally	2134.42	0.00	1,184.11	574.45	1,758.56	0.00	259.44
Mahadevpur	1372.48	0.00	1,024.22	197.89	1,222.10	-13.74	77.61
Nasturpally	1747.95	0.00	1,121.57	223.82	1,345.39	-3.34	158.95
Palgul	2761.3	0.00	443.94	487.01	930.95	0.00	398.12
Pratapgiri	1075.19	0.00	663.86	306.88	970.74	0.00	91.77
Rapallykota	2611.86	0.00	558.55	686.5	1,245.05	0.00	184.75
Sandrupally	1950.54	0.00	979.85	367.39	1,347.23	-2.65	281.02
Suraram	3192.71	0.00	85.37	719.82	805.19	0.00	301.2
Total	48789.33	0.00	12,848.21	7,500.07	20,348.28	-34.87	4,353.45
MANTHANI Range							
Adavisrirampur	4035.46	0.00	358.87	840.42	1,199.29	0.00	293.03
Arinda	4408.99	0.00	17.14	476.39	493.53	0.00	650.79
Begumpet	5543.01	0.00	567.04	146.46	713.5	0.00	8.4
Bhatpally	1334.93	0.00	70.79	507.84	578.63	0.00	392.14
Bompally	7359.77	0.00	51.96	135.97	187.93	0.00	44.38
Eklashpur	3167.31	0.00	369.99	531.08	901.07	0.00	445.12
Gajulapally	8053.08	0.00	745.04	326.91	1,071.95	0.00	93.56
Gopalpur	3954.32	0.00	343.9	716.32	1,060.22	-2.58	525.83
Gunjapadugu	10198.32	0.00	0	1.62	1.62	0.00	183.17
Kalvacherla	3335.79	0.00	953.71	530.96	1,484.67	0.00	146.79
Kannal	3433.38	0.00	2.88	189.06	191.94	0.00	697.44
Khammampally	3933.38	0.00	366.6	785.04	1,151.64	0.00	465.95
Khansaipet	2020.37	0.00	55.37	541.38	596.75	0.00	807.98
Kukkalagudur	15951.11	0.00	744.59	445.26	1,189.85	0.00	131.6
Kunaram	24280.33	0.00	359.69	408.3	767.99	-5.37	239.84
Lakkaram	2528.55	0.00	473.21	423.62	896.83	-15.00	496.38
Maidambanda	5511.06	0.00	681.14	272.84	953.98	0.00	88.42
Maredugonda	3879.7	0.00	33.66	568.88	602.54	0.00	567.12
Peddapally	49131.06	0.00	360.98	602.84	963.82	-4.03	230.66
Putnoor	6088.86	0.00	229.54	374.32	603.86	0.00	115.08
Ramagundam	24300.36	0.00	151.32	493.54	644.86	0.00	175.64
Rangapur	6463.36	0.00	44.89	144.65	189.54	0.00	442.15
Sabitham	1959.45	0.00	23.71	209.58	233.29	0.00	147.07
Somanpally	3063.45	0.00	236.16	670.43	906.59	0.00	1,086.27
Takkallapally	5589	0.00	395.96	562.11	958.07	0.00	113.91
Total	209524.4	0.00	7,638.12	10,905.84	18,543.97	-26.98	8,588.73
Division total	381399.99	0.00	65,892.54	41,602.48	107,495.02	-216.45	25,872.10

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



40. Karimnagar West Division

Introduction: Karimnagar west Forest Division lies in the western Part of Karimnagar District, between latitudes 17° 58' 58" and 19° 4' 37"N and longitudes 78° 30' 56" and 79° 36' 54"E. The Geographical Area of the Division is 8,009 Km². which is 77.75% of the geographical area of the District. This Division lies on Deccan Plateau. The River Godavari forms Northern and Eastern boundary of the Division as well as the District. Godavari and Maneru are main rivers of Karimnagar West division. The major irrigation project of the district is the Shriram sagar reservoir project, which covers 35 mandals in the district.

Table 40.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	8009	
Forest including Scrub	959.19	11.98
Agriculture	5315.40	66.37
Land with Scrub	705.84	8.81
Fallow Lands	246.07	3.07
Settlements	123.64	1.54
Vegetation outside Forest	426.79	5.33
Waterbody	232.06	2.90

Land use pattern of the Division is given in **Table 40.1**.

The climate of this Division is generally dry with temperatures ranging from 21°C to 47°C and the annual rainfall is about 756 mm, receiving mainly from Southwest monsoons.

The soil types found in the Division are mainly are Clayey loam, Sandy loam and Red chelkas interspersed with Block cotton soils.

The total population of the Division is 2.52 million (2001 Census), which constitutes 77.5% of the total population of the district. The Per capita forest area is 0.041 ha. The

population density is 315 persons per Km². The Literacy rate in the division is 56%.

Recorded Forest Area: The total notified forest area of the Division is 1,044.71 Km², which is 13.04% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 864.29 Km² (82.73%), 168.72 Km² (16.15%) and 11.70 Km² (1.12%) of the total forest area respectively.

As per Champion and Seth's classification, the forests of Division fall under Tropical dry deciduous and Tropical Thorn Forest types consisting of mixed teak and miscellaneous type of corporation.

Protected Area: No Protected Area is there in the Division.

Community Forest Management: There are 236 **Vana Samrakshana Samities** (VSSs) or JFPCs in the Division. An area of 554.499 Km² forests, which is 44.4 % of forest area, is under CFM.

Forest Cover: The forest cover in the Division, based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 839.99 Km², which is 10.48% of the total Geographical area. In terms of the forest canopy density classes, the Division has 501.74 Km² of Moderately Dense Forests and 337.26 Km² of Open Forests. The area of the Scrub is 120.20 Km², Non-Forest 13.50 Km² and Water Bodies 1.78 Km². The distribution of the forest cover of the division is shown in **Figure 40.1**.

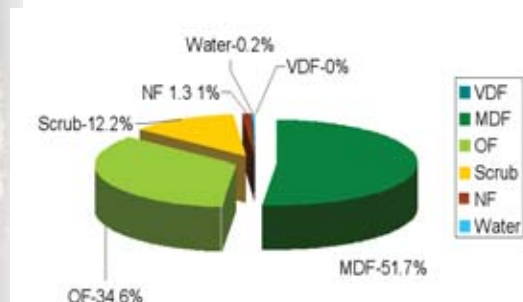
• The distribution of Forest Cover in the JFM/CFM areas is as follows:- 341.13Km² in Moderately Dense Forests & 153.28 Km² in Open Forests. The area of the Scrub is 53.70 Km², 5.99 Km² is Non-Forests and 0.40 Km² is Water bodies.

• **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Oct 2007 - Jan 2008), shows a net loss of 211 Ha of forest cover during the period of one year.

• The **change matrix**, given in **Table 40.2** reveals that there has been a decrease of 1.86 Km² of moderately dense forest and 0.25 Km² of open forest.

• The simplified forest cover change matrix is given in **Table 40.3** and **Table 40.4**.

On the basis of ground truthing conducted by the officers of



the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations.

- There are **106 beats** in the division. Negative change in forest cover is seen in 8 beats and no change in 98 beats.
- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 40.5**.

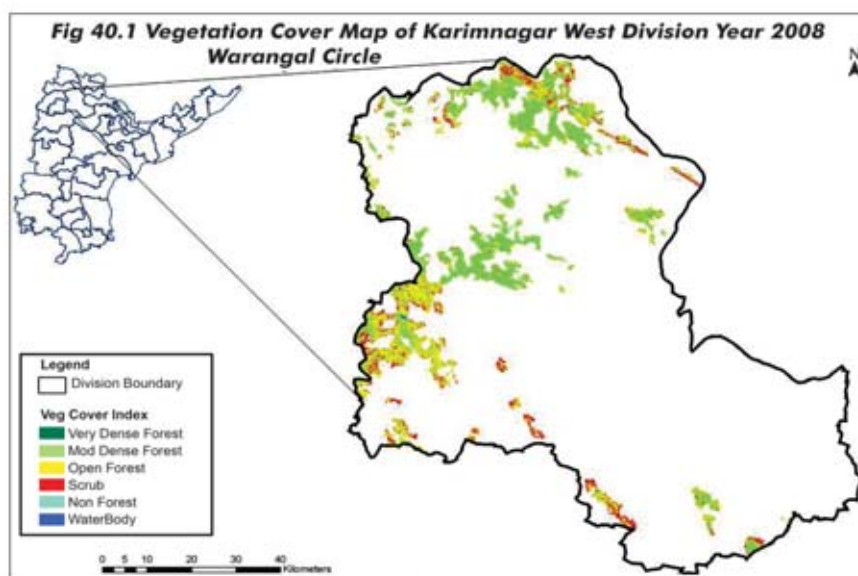


Table 40.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Oct 2007 - Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	501.74	0.00	1.42	0.44	0.00	503.59
Open Forest	0.00	0.00	337.26	0.06	0.20	0.00	337.51
Scrub	0.00	0.00	0.00	118.72	0.21	0.00	118.93
Non Forest	0.00	0.00	0.00	0.00	12.66	0.00	12.66
Water	0.00	0.00	0.00	0.00	0.00	1.78	1.78
Total of 2008	0.00	501.74	337.26	120.20	13.50	1.78	974.47
Net Change	0.00	-1.86	-0.25	1.27	0.84	0.00	0.00

Table 40.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Oct 2007 - Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	838.99	2.11	0	841.10
Degraded Forest	0	131.59	0	131.59
Water	0	0	1.78	1.78
Total of 2008	838.99	133.70	1.78	974.47
Net Change	-2.11	2.11	0	

Table 40.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Oct 2007 - Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	959.19	0.84	0	960.03
Barren	0	12.66	0	12.66
Water	0	0	1.78	1.78
Total of 2008	959.19	13.50	1.78	974.47
Net Change	0.84	0.84	0	



Table 40.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
JAGTIAL Range							
Allipur_east	417.86	0.00	198.47	33.95	232.42	0.00	4.84
Allipur_west	5505.46	0.00	286.46	309.08	595.54	0.00	7.86
Battapally	1163.18	0.00	293.01	251.91	544.92	0.00	81.31
Chinnapur	3913.42	0.00	477.82	80.13	557.95	0.00	15.59
Donoor	6514.20	0.00	495.82	365.87	861.69	0.00	47.00
Eldurthy	7924.78	0.00	582.26	33.13	615.39	0.00	6.39
Govindaram	11300.96	0.00	751.22	97.20	848.42	0.00	8.72
Habsipur	1043.16	0.00	527.38	56.13	583.51	0.00	23.15
Kalleda	13006.13	0.00	671.30	164.36	835.66	0.00	54.36
Kandlapally	1885.32	0.00	836.31	431.25	1267.56	0.00	99.04
Kolvai	3456.24	0.00	421.80	378.13	799.93	0.00	285.40
Laxmidivipally	2351.74	0.00	774.50	119.53	894.03	0.00	18.18
Maddutla	2614.52	0.00	683.11	29.47	712.58	0.00	1.69
Manal	10156.92	0.00	511.22	39.03	550.25	0.00	25.14
Muthkuraopet	1064.29	0.00	695.07	51.11	746.18	-74.50	10.59
Nagnoor	2481.71	0.00	763.54	276.47	1040.01	0.00	25.23
Narsimulapally	3087.07	0.00	556.98	436.00	992.98	0.00	215.89
Nerella	3355.28	0.00	790.40	495.90	1286.30	0.00	131.69
Ogulapur	3537.61	0.00	820.47	137.43	957.90	0.00	11.73
Rangasagar	1508.50	0.00	566.24	445.95	1012.19	0.00	47.77
Rechapally_east	1086.99	0.00	548.20	155.69	703.89	0.00	30.84
Rechapally_west	1670.51	0.00	324.26	33.47	357.73	0.00	4.19
Sarangapur	1673.62	0.00	740.48	142.95	883.43	0.00	43.11
Talladharmaram	2252.18	0.00	318.80	395.69	714.49	0.00	164.51
Tatipally_north	7461.42	0.00	437.73	49.60	487.33	0.00	4.80
Tatpally_south	2615.12	0.00	493.89	99.08	592.97	0.00	20.20
Thurthi	803.41	0.00	659.54	70.16	729.70	-15.71	11.75
Tuminalla	4623.06	0.00	414.50	343.70	758.20	0.00	132.45
Velgonda	1454.39	0.00	137.03	25.85	162.88	0.00	0.40
Waddat	3632.38	0.00	1199.58	194.10	1393.68	0.00	17.57
Total	113561.40	0.00	16977.39	5742.32	22719.71	-90.21	1551.39
KARIMANAGAR Range							
Bommareddypally	14937.61	0.00	527.45	355.60	883.05	0.00	18.02
Choppadandi	12921.22	0.00	0.00	0.00	0.00	0.00	0.00
Dammaipet	1412.53	0.00	901.84	159.95	1061.79	0.00	35.44
Elkaturthy	28921.91	0.00	30.28	19.99	50.27	0.00	4.52
Fazilnagar	5876.58	0.00	960.21	190.28	1150.49	0.00	18.39
Gangadhara	39795.10	0.00	1.20	4.16	5.36	0.00	0.37
Gollakota	10734.13	0.00	603.39	286.61	890.00	0.00	37.10
Jammikunta	24718.40	0.00	0.00	0.00	0.00	0.00	0.00
Kamalapur	14344.18	0.00	0.00	0.00	0.00	0.00	0.00

Kapparaopet	9322.85	0.00	113.74	224.00	337.74	0.00	297.59
Karimanagar	19766.33	0.00	0.00	1.27	1.27	0.00	0.00
Keshavapatnam	57042.93	0.00	0.00	0.00	0.00	0.00	0.00
Kodmial	5852.35	0.00	819.35	116.42	935.77	0.00	15.83
Lagalamarri	10246.82	0.00	584.15	381.64	965.79	0.00	38.53
Mirzapur	46996.67	0.00	2043.22	1210.89	3254.11	0.00	557.82
Muthyampet	7238.45	0.00	713.83	87.43	801.26	0.00	21.06
Raipatnam	7652.13	0.00	244.16	362.35	606.51	0.00	413.19
Regonda	48897.60	0.00	60.72	679.14	739.86	0.00	808.43
Shanigaram	36669.79	0.00	164.37	710.94	875.31	0.00	408.06
Surampet	1916.27	0.00	849.67	75.91	925.58	0.00	20.02
Tirumalapur	2643.08	0.00	849.38	111.78	961.16	0.00	8.90
Total	407906.93	0.00	9466.96	4978.36	14445.32	0.00	2703.27
RAIKAL Range							
Amberipet	2971.09	0.00	740.02	170.19	910.21	0.00	56.32
Bandalingapur]	2556.20	0.00	354.99	255.48	610.47	0.00	61.40
Bhupathipur	8946.08	0.00	958.02	94.15	1052.17	0.00	13.98
Bornapally_north	2417.94	0.00	722.29	540.28	1262.57	-2.68	372.37
Bornapally_south	890.95	0.00	457.38	150.47	607.85	0.00	6.58
Chintakunta	12187.40	0.00	1630.52	156.12	1786.64	0.00	58.25
Chintalur	2005.49	0.00	789.79	124.21	914.00	0.00	13.05
Dabba	6615.83	0.00	486.12	230.40	716.52	-30.59	43.28
Devanpally	1000.11	0.00	298.46	294.64	593.10	0.00	90.43
Dharmajipet	1047.59	0.00	736.95	23.50	760.45	0.00	1.86
Gorrepally	2264.59	0.00	747.56	273.84	1021.40	0.00	118.54
Heerapur	2779.24	0.00	451.71	143.48	595.19	0.00	1.20
Ibrahimpattam	3485.90	0.00	268.98	244.48	513.46	0.00	134.09
Katkapur_north	1090.40	0.00	117.94	377.77	495.71	0.00	251.57
Katkapur_south	1161.21	0.00	388.84	498.17	887.01	0.00	113.20
Kothapet	2553.72	0.00	665.49	83.91	749.40	0.00	6.65
Laxmipur	19661.51	0.00	80.09	296.17	376.26	0.00	125.02
Mallapur	4050.19	0.00	47.62	114.81	162.43	0.00	84.67
Moghalpet	5132.66	0.00	613.99	132.89	746.88	0.00	25.33
Rangaraopet	6768.99	0.00	669.73	288.65	958.38	0.00	108.03
Regunta	6766.84	0.00	511.25	371.00	882.25	0.00	196.55
Sattakkapally	2194.25	0.00	59.53	68.81	128.34	0.00	0.89
Tatalvai	1001.04	0.00	717.75	8.50	726.25	0.00	0.00
Vasthapur	1217.67	0.00	708.57	96.87	805.44	-5.54	10.51
Vempallyvenkatraopet	3560.32	0.00	865.21	263.68	1128.89	0.00	21.23
Vemulakurthy	5717.68	0.00	450.07	185.27	635.34	0.00	89.55
Total	110044.88	0.00	14538.87	5487.74	20026.61	-38.81	2004.55
SIRCILLA Range							
Advipadira	1001.25	0.00	69.19	314.19	383.38	0.00	107.58
Akkapally	6802.66	0.00	244.92	721.83	966.75	0.00	61.96
Almaspur	2431.17	0.00	230.13	803.75	1033.88	0.00	155.62

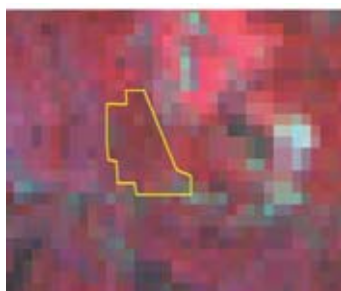


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Chandurthy	5330.10	0.00	1019.98	60.02	1080.00	-48.32	2.66
Chirlavancha	10539.29	0.00	0.00	139.28	139.28	0.00	270.86
Garjanpally	2218.50	0.00	318.01	420.61	738.62	0.00	194.34
Gollapally	6898.41	0.00	163.00	908.52	1071.52	0.00	199.52
Gorintial	6305.51	0.00	249.08	701.06	950.14	0.00	233.80
Gundaram	2540.38	0.00	214.69	559.88	774.57	0.00	188.45
Irnepally	2294.33	0.00	417.41	882.45	1299.86	0.00	174.08
Jillella	25993.16	0.00	49.90	678.53	728.43	0.00	578.01
Kancherla	1247.12	0.00	480.49	400.87	881.36	0.00	46.18
Konaraopet	3456.37	0.00	378.23	739.57	1117.80	0.00	47.04
Lingannapet	6284.76	0.00	111.58	601.34	712.92	0.00	314.48
Maddimalla_north	1508.80	0.00	433.84	388.76	822.60	-19.74	255.05
Maddimalla_south	1311.42	0.00	196.25	420.56	616.81	0.00	385.88
Marrimadla_north	2568.22	0.00	581.19	1364.26	1945.45	0.00	214.30
Marrimadla_south	1303.94	0.00	165.69	547.75	713.44	0.00	151.29
Mucherla	9068.20	0.00	222.06	738.33	960.39	0.00	313.21
Nimmapally	1859.16	0.00	289.19	546.80	835.99	0.00	115.40
Nizamabad	7537.69	0.00	297.13	845.63	1142.76	0.00	138.94
Nookalamarri	15842.82	0.00	718.44	64.19	782.63	0.00	8.16
Peddalingapur	14194.71	0.00	10.28	114.08	124.36	0.00	237.25
Rudrangi_east	2063.44	0.00	807.18	216.20	1023.38	0.00	17.92
Rudrangi_west	4625.00	0.00	919.61	1400.92	2320.53	0.00	253.75
Thimmapur	2518.54	0.00	202.24	491.33	693.57	0.00	236.88
Vanpally	867.37	0.00	269.56	470.27	739.83	0.00	119.31
Vattimalla	8606.22	0.00	194.11	1308.74	1502.85	-13.92	358.34
Venkatapur	12168.23	0.00	123.58	694.24	817.82	0.00	248.39
Total	169386.79	0.00	9376.96	17543.96	26920.92	-81.98	5628.65
Division total	800900.00	0.00	50360.18	33752.38	84112.56	-211.00	11887.86

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	78.84416
Latitude	19.06041
Area	2.7 ha
Change	DF TO SF
Compartment No	528
Beat	Bournapalli north
Range	Raikal
Division	Karimnagar west

41. Warangal North Division

Warangal Circle

Introduction: Warangal (North) Forest Division lies in the Northern west Part of Warangal District, between latitudes 17° 29' 16" and 18° 36' 20" N and longitudes 78° 49' 49" and 80° 40' 13" E. The Geographical Area of the Division is 8,687.81 Km², which is 75.96% of the total area of the District. The elevation of the terrain Ranges from 266 to 518 Mts. above Mean Sea level. The general slope of the land is towards South East, the surplus water draining into Godavari river. Dayyam vagu is one of the important rivulet flowing in the Division and passes through mostly Forest area.

Land use pattern of the division is given in **Table 41.1**.

The climate of this Division is generally dry with **temperature** ranging from 15°C to 45°C and the annual rainfall is about 1015.8 mm, received mainly from Southwest monsoons.

The soil types found mainly are Black cotton, Loamy, sandy and Alluvial. The rocks found in this Division are Archeans, Granites, Gneissus and Dyke. The Mineral Resources in this division are Iron ore, Lime stone and Coal.

The total population of the Division is 2.34 million (2001 Census). The Per capita forest area is 0.098 ha. The population density is 258 persons per Km².

Table 41.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	8687.81	
Forest including Scrub	2062.96	23.75
Agriculture	5402.94	62.19
Land with Scrub	370.82	4.27
Fallow Lands	308.13	3.55
Grasslands	0	0
Settlements	103.8	1.19
Vegetation outside Forest	171.84	1.98
Water Body	267.32	3.07

Recorded Forest Area: The total notified forest area of the Division is 2,310.25 Km², which is 26.59% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 1,579.06 Km² (68.35%), 709.02 Km² (30.69%) and 22.18 Km² (0.95%) of the total forest area respectively.

As per Champion and Seth's classification, the forests of Division falls under Dry deciduous teak Forests and Tropical Moist deciduous Forests.

Protected Area: There is no Protected area in the Division now, since part of the Warangal North Division was constituted as Warangal WLM Division.

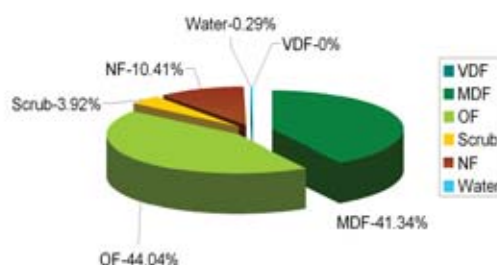
Community Forest Management: There are 127 Vana Samrakshana Samities (VSSs) in the Division. 332.38 Km² forest area, which is 8.95 % of the notified forests. During the JFM/CFM project period about 16.75 Km² area brought under plantations.

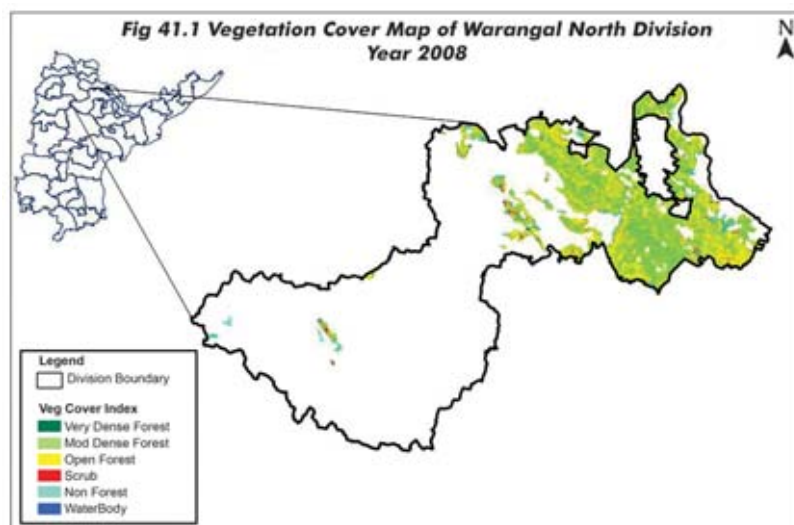
Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008), is 1,970.66 Km², which is 22.68% of the total Geographical area. In terms of the forest canopy density classes the Division has 955.09 Km² of Moderately Dense Forests and 1017.34 Km² Open Forests. The area of the Scrub is 90.53 Km², Non-Forests 240.56 Km² and Water Bodies 6.73 Km². The distribution of the forest cover of the division is shown in **Figure 41.1**.

• The distribution of Forest Cover in the JFM/CFM areas is as follows: 106.65 Km² in Moderately Dense Forests & 149.04 Km² in Open Forests. The area of the Scrub is 18.94 Km², 56.99 Km² is Non-Forests and 0.76 Km² in Water bodies.

• **Comparison** of the current forest cover year 2008 (Satellite Imagery of Dec 2008) with that of previous assessment year 2007 (Satellite Imagery of Oct 2007 - Jan 2008), shows net loss of 176.1 Ha of forest cover during the period of one year.

• The **change matrix**, given in **Table 41.2** reveals that there has been a decrease of 1.10 Km² of moderately dense forest and 0.67 Km² of open forest.





- The simplified forest cover change matrix is given in **Table 41.3** and **Table 41.4**.
- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in the forest cover is due to encroachments and clearance for rising of plantations.
- There are **84 beats** in the division. Negative change in forest cover is seen in 8 beats and no change in 76 beats.
- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 41.5**.

Table 41.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	953.99	0.00	0.13	0.97	0.00	955.09
Open Forest	0.00	0.00	1016.67	0.00	0.67	0.00	1017.34
Scrub	0.00	0.00	0.00	90.53	0.00	0.00	90.53
Non-Forest	0.00	0.00	0.00	0.00	240.56	0.00	240.56
Water	0.00	0.00	0.00	0.00	0.00	6.73	6.73
Total of 2008	0.00	953.99	1016.67	90.66	242.20	6.73	2310.25
Net Change	0.00	-1.10	-0.67	0.13	1.64	0.00	0.00

Table 41.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1970.66	1.77	0	1972.43
Degraded Forest	0	331.09	0	331.09
Water	0	0	6.73	6.73
Total of 2008	1970.66	332.86	6.73	2310.25
Net Change	-1.77	1.77	0	

Table 41.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007 – Jan 2008)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	2061.32	1.64	0	2062.96
Barren	0	240.56	0	240.56
Water	0	0	6.73	6.73
Total of 2008	2061.32	242.2	6.73	2310.25
Net Change	-1.64	1.64	0	

Table 41.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BHUPALAPALLI_NORTH Range							
Alliguda (S)	3312.91	0.00	2577.74	623.04	3200.78	0.00	14.95
Alliguda (N)	2981.87	0.00	2207.05	527.86	2734.91	0.00	30.91
Andukthanda	2610.44	0.00	235.4	574.32	809.72	-35.00	44.91
Bandal	6386.58	0.00	5092.57	1123.48	6216.05	0.00	36.63
Beerelli	4905.43	0.00	1997.09	2080.44	4077.53	-15.00	267.67
Bhagirthipet	39484.39	0.00	18.79	411.1	429.89	0.00	242.36
Bhupathipur	2904.48	0.00	1554.89	1217.16	2772.05	0.00	35.74
Bodiguda	3543.43	0.00	2107.22	1348.19	3455.41	0.00	45.56
Burgupet	8537.72	0.00	2788.53	1884.93	4673.46	0.00	132.4
Bussapur	1903.94	0.00	631.58	916.77	1548.35	0.00	128.51
Chelpur	13177.4	0.00	774.49	701.4	1475.89	0.00	39.93
Chinnaboinapally	3275.37	0.00	1404.17	971.5	2375.67	0.00	94.94
Chittial	2531.86	0.00	1597.62	834.13	2431.75	0.00	14.9
Damervai	2347.53	0.00	999.27	1158.45	2157.72	0.00	65.85
Devnoor	12869.6	0.00	24.45	466.7	491.15	0.00	67.64
Domeda	4948.79	0.00	526.35	1941.93	2468.28	-12.50	141.47
Dudekulapalli	3017.2	0.00	1356.79	1164.69	2521.48	0.00	28.05
Eturnagaram	6272.38	0.00	792.13	876.21	1668.34	0.00	92.05
Gangaram	2961.37	0.00	2174.54	788.56	2963.1	0.00	23.4
Gurvella	4759.47	0.00	1420.97	907.58	2328.55	0.00	49.15
Total	132732.16	0.00	30281.64	20518	50800.08	-62.50	1597.02
ETURANGARAM Range							
Incherla	2580.07	0.00	58.88	303	361.88	0.00	65.92
Jakaram	4887.13	0.00	141.38	802.73	944.11	0.00	218.08
Kamalapur	4549.21	0.00	1017.76	2225.79	3243.55	0.00	148.92
Karlapalli (N)	5910.98	0.00	963.16	2557.77	3520.93	0.00	246.05
Karlapalli (S)	5022.89	0.00	1746.33	2290.94	4037.27	0.00	61.5
Kasimdevipet	2999.92	0.00	848.3	849.1	1697.4	0.00	83.7
Katapur	3693.25	0.00	1157.26	764.72	1921.98	0.00	64.76
Katrepally	108107.25	0.00	114.69	873.79	988.48	0.00	106.21
Kodishella (N)	4024.8	0.00	1928.6	1869.98	3798.58	0.00	29.65
Kodishella (S)	3152.6	0.00	1303.1	1867.85	3170.95	0.00	22.52
Komatpalli	2693.6	0.00	441.19	1311.74	1752.93	-32.00	182.15
Kothanagaram	2700.26	0.00	1101.26	962.97	2064.23	0.00	81.64
Lawal	6407.94	0.00	4799.62	1448.47	6248.09	0.00	77.28
Lingal	4924.98	0.00	2473.46	1745.69	4219.15	0.00	106.5
Machapur	2296.37	0.00	688.86	653.81	1342.67	0.00	57.27
Machupad	3382	0.00	622.71	708.21	1330.92	0.00	51.19
Mallampalli	4212.03	0.00	1078.16	656.56	1734.72	0.00	20.35
Mallur	3054.53	0.00	824.45	486.5	1310.95	0.00	33.39
Mangapet	3461.37	0.00	230.9	1265.78	1496.68	0.00	156.86
Motlaguda	4755.41	0.00	2322.3	2008.45	4330.75	0.00	72.37
Mulug	6193.23	0.00	172.54	398.66	571.2	0.00	136.52
Total	189009.82	0.00	24034.91	26053	50087.42	-32.00	2022.83
MULUG Range							
Nagapuri	58920.23	0.00	0	30.5	30.5	0.00	50.68



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Nallagunta	1472.07	0.00	996.61	462.93	1459.54	0.00	16.23
Narayanpur	2782.93	0.00	874.21	1069.37	1943.58	-33.00	47.54
Narlapur	3412.49	0.00	829.59	1525.71	2355.3	0.00	222.06
Narsimhasagar	3477.71	0.00	575.97	1390.43	1966.4	0.00	101.87
Narsingapur	2662.24	0.00	1609.94	998.58	2608.52	0.00	40.95
Nawabpet	8567.96	0.00	218.57	432.79	651.36	0.00	95.79
Neredupally	4558.77	0.00	3.09	457.89	460.98	0.00	172.32
Oorattam	10406.08	0.00	4609.74	3708.83	8318.57	0.00	208.96
Palampet	6458.47	0.00	88.6	512.04	600.64	0.00	68.35
Pambapur	3774.25	0.00	169.05	670.83	839.88	0.00	80.93
Pandikunta	6908.7	0.00	77.59	788.13	865.72	0.00	209.88
Pasra	5580.94	0.00	1668.58	1104.2	2772.78	0.00	40.92
Peddapur I	2039.9	0.00	1225.35	818.7	2044.05	0.00	23.51
Peddapur II	5768.19	0.00	1206.15	421.83	1627.98	-2.60	29.53
Total	126790.93	0.00	14153.04	14393	28545.8	-35.60	1409.52
PASARA Range							
Pongal	5854.04	0.00	65.43	351.86	417.29	0.00	89.39
Puredpalli	3587.45	0.00	1299.8	1721.78	3021.58	-32.00	187.09
Raghunathpalli	87774.97	0.00	0	36.88	36.88	0.00	57.94
Rajupet	3081.87	0.00	649.5	165.77	815.27	0.00	34.98
Rampur (N)	2915	0.00	468.99	1322.91	1791.9	0.00	84.06
Rampur (S)	6129.08	0.00	1772	2966.4	4738.4	0.00	157.95
Rampur_mulakatta	3876.01	0.00	640.75	1392.17	2032.92	0.00	71.2
Rampur_new	2435.15	0.00	1179.94	896.64	2076.58	0.00	60.79
Rangapur	4234.56	0.00	812.37	3201.41	4013.78	0.00	190.24
Ravulapalli	113943.92	0.00	51.42	545.47	596.89	0.00	78.89
Rayanguda	11369.5	0.00	864.97	3576.07	4441.04	0.00	297.77
Roheer	5411.31	0.00	1610.99	1500.13	3111.12	0.00	116.72
Salpak	5921	0.00	1735.66	1909.27	3644.93	0.00	78.87
Salvai	5355.08	0.00	942.12	1673.05	2615.17	0.00	135.85
Shahpalli	4336.22	0.00	2109.77	1468.61	3578.38	0.00	84.38
Souledu	3297.35	0.00	2262.1	931.55	3193.65	0.00	3.32
Tadvai	5197.74	0.00	2208	1779.92	3987.92	0.00	166.16
Total	274720.25	0.00	18673.81	25440	44113.7	-32.00	1895.6
T.P.WARANGAL Range							
Tatikonda	85067.39	0.00	2.61	673.13	675.74	0.00	437.04
Thimmampet	6984.3	0.00	931.99	2057.5	2989.49	0.00	230.92
Thimmapur	3418.14	0.00	478.12	2532.26	3010.38	0.00	179.84
Thirmalagiri	7998.6	0.00	126.88	1086.3	1213.18	0.00	462.23
Tondyal laxmipur	3401.38	0.00	1210.6	1612.68	2823.28	0.00	74.66
Total	106869.81	0.00	2750.2	7961.9	10712.07	0.00	1384.69
TADWAI Range							
Tupakulaguda	2441.47	0.00	429.78	1057.04	1486.82	0.00	20.9
Velchal	20911.95	0.00	122.97	295.96	418.93	0.00	93.56
Vencharam	2653.01	0.00	69.66	972.14	1041.8	-14.00	276.95
Venkatapur	4180.59	0.00	1381.9	1253.38	2635.28	0.00	142.63
Yenglapur	3486.32	0.00	1394.74	1674.14	3068.88	0.00	76.15
Yennelamadugu	4985.4	0.00	2215.88	2116.01	4331.89	0.00	133.26
Total	38658.74	0.00	5614.93	7368.7	12983.6	-14.00	743.45
Division total	868781.71	0.00	95508.53	101734	197242.67	-176.10	9053.11

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

42. Warangal South Division

Warangal Circle

Introduction: Warangal (South) Forest Division lies in the South East Part of Warangal District, between latitudes 17° 19' 05" and 18° 07' 04" N and longitudes 79° 35' 32" and 80° 18' 32" E. The Geographical Area of the Division is 3,618 Km², which constitutes 29.3% of the total geographical area of the District. The Division is having an altitude of 420 m to 658 m and the plains having an altitude of 302 m.

Land use pattern of the Division is given in **Table 42.1**.

The climate of this Division is generally dry with temperatures ranging from 15°C to 45°C and the annual rainfall is about 1015.8 mm, received mainly from Southwest monsoons.

The soil types found mainly are Black cotton, Red and Brown sandy loam.

The total population of the Division is 0.867 million (2001 Census). The Per capita forest area is 0.135 ha. The population density is 240 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1,174 Km², which is 32.4% of the total geographical area. Reserved, Protected and Un-classed Forests Constitute 572.8 Km² (48.79%), 598 Km² (51.03%) and 2.11 Km² (0.18%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Dry deciduous teak Forests, Tropical dry deciduous mixed forests, bamboo and mixed teak forests.

Protected Area: There is no Protected area in the Division now, since part of the Warangal South Division was constituted as Warangal WLM Division.

Community Forest Management: There are about 147 Vana Samrakshana Samities (VSSs) in the Division. An area of 339.46 Km² forest area, which is 19.89 % of notified forest area. There are about 19.89 Km² of forest area is brought under plantations.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 741.75 Km², which is 20.5% of the total Geographical area. In terms of the forest canopy density classes the Division has 309.49 Km² of Moderately Dense Forests and 432.26 Km² of Open Forests. The area of the Scrub is 73.42 Km², Non-Forest 337.20 Km² and Water Bodies 22.29 Km². The distribution of the forest cover of the division is shown in **Figure 42.1**.

• The **distribution of Forest Cover** in the JFM/CFM areas is as follows: 82.73 Km² in Moderately Dense Forests, 137.44 Km² in Open Forests. The area of the Scrub is 27.63 Km², 90.46 Km² is Non-Forests and 1.21 Km²

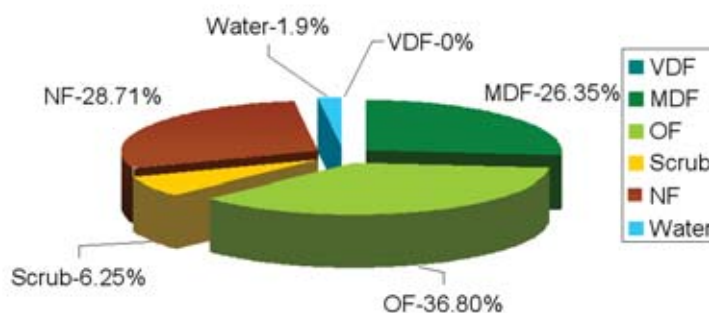
Water bodies. • **Comparison** of the current forest cover year 2008 (Satellite Imagery of Dec 2008) with that of previous assessment year 2007 (Satellite Imagery of Dec 2007), shows no change of forest cover during the period of one year

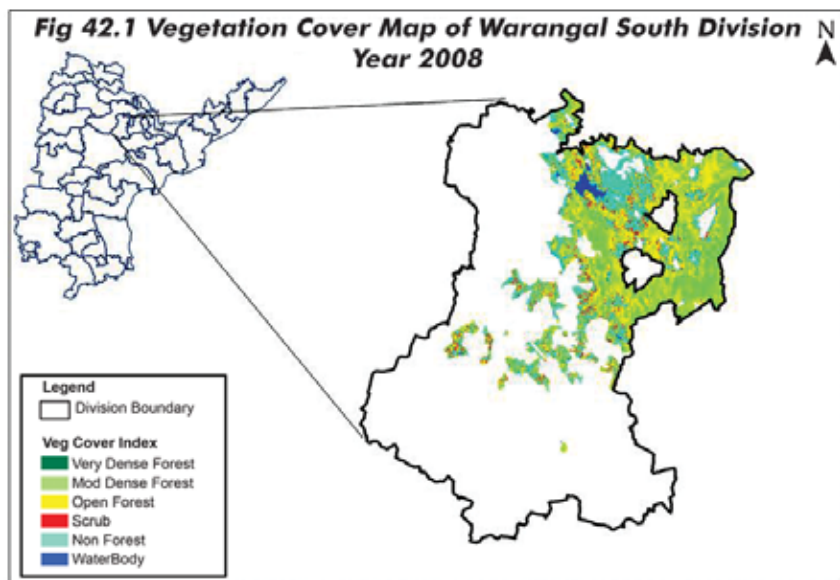
• The **change matrix**, given in **Table 42.2** reveals that there has no change.

The simplified forest cover change matrix is given in **Table 42.3** and **Table 42.4**.

Table 42.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3618.13	
Forest including Scrub	815.16	22.53
Agriculture	2296.34	63.47
Land with Scrub	174.21	4.81
Fallow Lands	77.86	2.15
Grasslands	0	0.00
Settlements	13.11	0.36
Vegetation outside Forest	94.3	2.61
Water Body	147.15	4.07





• Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in Table 42.5.

Table 42.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	309.49	0.00	0.00	0.00	0.00	309.49
Open Forest	0.00	0.00	432.26	0.00	0.00	0.00	432.26
Scrub	0.00	0.00	0.00	73.42	0.00	0.00	73.42
Non-Forest	0.00	0.00	0.00	0.00	337.20	0.00	337.20
Water	0.00	0.00	0.00	0.00	0.00	22.29	22.29
Total of 2008	0.00	309.49	432.26	73.42	337.20	22.29	1174.65
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 42.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	741.75	0.00	0.00	741.75
Degraded Forest	0.00	410.61	0.00	410.61
Water	0.00	0.00	22.29	22.29
Total of 2008	741.75	410.61	22.29	1174.65
Net Change	0.00	0.00	0.00	

Table 42.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	815.16	0.00	0.00	815.16
Barren	0.00	337.20	0.00	337.20
Water	0.00	0.00	22.29	22.29
Total of 2008	815.16	337.20	22.29	1174.65
Net Change	0.00	0.00	0.00	

Table 42.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
GUDUR Range						
Apparajpally	5044.26	0.00	273.55	675.31	948.86	226.04
Bhupathipet	3611.68	0.00	1291.49	815.63	2107.12	83.89
Damarancha	1503.96	0.00	1.83	170.62	172.45	130.81
Doravarithimmapur	4165.67	0.00	2518.54	1904.23	4422.77	57.53
Gajulagattu	2629.44	0.00	9.81	436.6	446.41	156.3
Gudur	2994.87	0.00	597.09	844.37	1441.46	204.83
Gunjed	2550.8	0.00	1392.61	906.19	2298.8	62.25
Macherla	1193.32	0.00	208.38	452.46	660.84	98.18
Matwada	2365.55	0.00	496.04	1234.31	1730.35	115.91
Nagaram	11851.69	0.00	10.4	441.41	451.81	288.36
Naikpally	3519.91	0.00	9.49	302.59	312.08	115.21
Otla	2984.88	0.00	1243.9	1253.3	2497.2	102.49
Ponugodu	3411.55	0.00	120.85	676.06	796.91	115.65
Raichetlapad	4712.88	0.00	75.2	169.43	244.63	24.61
Total	52540.46	0.00	8249.18	10282.5	18531.7	1782.06
KOTHAGUDA Range						
Bavargonda	1707.59	0.00	654.47	654.92	1309.39	56.57
Buthulapally	3072.37	0.00	177.4	1657.17	1834.57	346.67
Enclosure	1056.41	0.00	14.61	148.08	162.69	105.81
Gangaram	2669.97	0.00	2031.77	739.53	2771.3	31.07
Gudipaddu	2400.19	0.00	1718.95	367.24	2086.19	23.08
Gurjalemote	1938.07	0.00	1206.31	687.17	1893.48	28.46
Jangalapally	3136.31	0.00	1873.88	1246.27	3120.15	87.46
Kamaram	3760.65	0.00	928.42	2329.3	3257.72	81.8
Komatlaguda	2574.33	0.00	1464.81	859.82	2324.63	81.38
Kothaguda	2986.12	0.00	288.03	575.47	863.5	227.7
Madaguda	3245.1	0.00	1058.34	1232.03	2290.37	158.83
Mamidiguda	2802.91	0.00	983.78	1083.6	2067.38	64.22
Marriguda	2962.12	0.00	806.52	1569.93	2376.45	89.53
Pandem-east	1816.74	0.00	1442.58	543.94	1986.52	30.86
Pandem-west	1434.08	0.00	1049.24	331.76	1381	11.42
Polaram	2620.22	0.00	361.81	1295.64	1657.45	266.28
Putlabhupathi	2037.7	0.00	919.78	791.24	1711.02	81.07
Thirmalgandi	1745.38	0.00	87.14	1185.01	1272.15	138.59
Total	43966.26	0.00	17067.84	17298.1	34366	1910.8
MAHBOOBABAD Range						
Alair	13134.01	0.00	202.77	450.83	653.6	114.74
Beriwada	2344.64	0.00	59.77	418.51	478.28	109.36
Chinnanagaram	45609.46	0.00	6.05	483.56	489.61	315.36
Edulapusapally	1422.18	0.00	15.09	205.05	220.14	134.62
Inugurthy	12193.94	0.00	14.25	601.27	615.52	260.4



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Jamandlapally	2124.12	0.00	26.04	437.36	463.4	192.52
Kambalpally	3898.01	0.00	275.03	582.69	857.72	153.33
Kesamudram	5120.9	0.00	29.04	267.39	296.43	69.06
Kongarigidda	2312.1	0.00	450.81	1168	1618.81	206.89
Mahabubabad	89797.99	0.00	56.12	557.46	613.58	152.34
Penugonda	822.32	0.00	11.71	167.78	179.49	94.81
Tadlapusapally	6762.75	0.00	32.07	334.79	366.86	187.95
Total	185542.4	0.00	1178.75	5674.69	6853.44	1991.38
NARSAMPET Range						
Ashoknagar	24843.99	0.00	50.86	710.53	761.39	119.87
Budharaopet	531.45	0.00	27.78	40.33	68.11	9.9
Dabeerpet	3382.71	0.00	490.31	1453.25	1943.56	264.67
Govindapur	27504.31	0.00	1164.27	1214.16	2378.43	174.88
Inchaguda(n)	2766.1	0.00	94.61	654.57	749.18	88.97
Inchaguda(s)	2484.01	0.00	16.25	523.91	540.16	205.61
Itkalpally	2346.34	0.00	5.71	138.34	144.05	88.07
Khanapur	560.38	0.00	142.56	194.84	337.4	37.54
Musimi_ii	2630.84	0.00	448.53	1345.41	1793.94	89.45
Musmi-I	2358.39	0.00	526.59	1012.35	1538.94	108.75
Pakhal	4225.38	0.00	544.49	1185.89	1730.38	278.35
Pogallapalli	4029.92	0.00	11.4	328.04	339.44	154.12
Ponugondla	2100.51	0.00	929.78	1168.67	2098.45	37.3
Total	79764.33	0.00	4453.14	9970.29	14423.4	1657.48
Division total	361813.5	0.00	30948.91	43225.6	74174.5	7341.72

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



43. Warangal WLM Division

Warangal Circle

Introduction: Warangal (WLM) Forest Division lies in the North West Part of Warangal District, between latitudes 17° 29' 16" and 18° 36' 20" N and longitudes 78° 49' 49" and 80° 40' 13" E. The Geographical Area of the Division is 540 Km². **Land use pattern** of the Division is given in **Table 43.1**.

The climate of this Division is generally dry with temperatures ranging from 15°C to 40°C and the annual rainfall is about 1015.8 mm, received mainly from Southwest monsoons.

The total population of the Division is 0.036 million (2001 Census). The Per capita forest area is 1.49 ha. The population density is 66 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 538.55 Km².

As per Champion and Seth's classification, the Forests of Division fall under Tropical dry deciduous, Tropical Moist

deciduous, Tropical Semi-evergreen and Tropical Thorn Forest types.

Protected Area: The Division is totally covered with Protected areas of Eturnagaram wildlife sanctuary and Pakhal wildlife Sanctuary.

Community Forest Management: There are 43 Vana Samrakshana Samities (VSSs) in the Division. An area of 100.67 Km² forest area, which is 18.69% of the notified forests

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 497.06 Km², which is 92.04% of the total Geographical area. In terms of the forest canopy density classes the Division has 219.27 Km² of Moderately Dense Forests and 277.79 Km² of Open Forests. The area of the Scrub is 14.49 Km², Non-Forests 25.23 Km² and Water Bodies 1.77 Km². The distribution of the forest cover of the division is shown in **Figure 43.1**.

- The **distribution of Forest Cover** in the JFM/CFM areas is as follows: 33.92 Km² in Moderately Dense Forests, 56.63 Km² in

- Open Forests. The area of the Scrub is 3.69 Km², 5.84 Km² is Non-Forest and 0.58 Km² Water bodies.

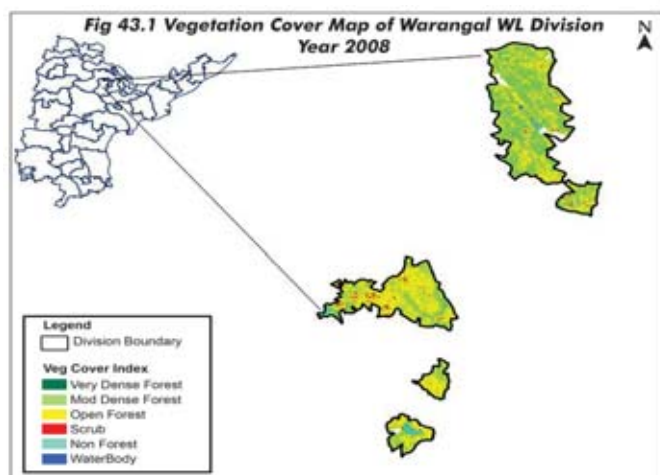
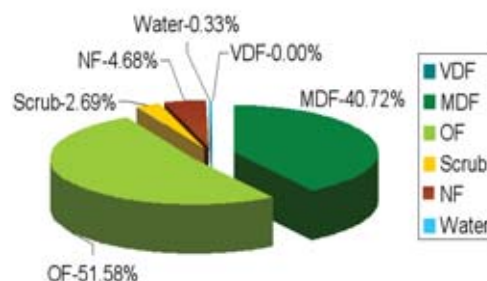
- The simplified forest cover change matrix is given in **Table 43.3** and **Table 43.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, found no change in 2007 & 2008.

- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment, is given in **Table 43.5**.

Table 43.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	540.04	
Forest including Scrub	511.55	94.72
Agriculture	6.86	1.27
Land with Scrub	5.41	1.00
Fallow Lands	0.19	0.04
Grasslands	0.00	0.00
Settlements	0.00	0.00
Vegetation outside Forest	14.99	2.78
Water Body	1.04	0.19



2007 (Data of Dec 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	219.27	0.00	0.00	0.00	0.00	219.27
Open Forest	0.00	0.00	277.79	0.00	0.00	0.00	277.79
Scrub	0.00	0.00	0.00	14.49	0.00	0.00	14.49
Non-Forest	0.00	0.00	0.00	0.00	25.23	0.00	25.23
Water	0.00	0.00	0.00	0.00	0.00	1.77	1.77
Total of 2008	0.00	219.27	277.79	14.49	25.23	1.77	538.55
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	

2007 (Data of Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	497.06	0.00	0.00	497.06
Degraded Forest	0.00	39.72	0.00	39.72
Water	0.00	0.00	1.77	1.77
Total of 2008	497.06	39.72	1.77	538.55
Net Change	0.00	0.00	0.00	

2007 (Data of Dec 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	511.55	0.00	0.00	511.55
Barren	0.00	25.23	0.00	25.23
Water	0.00	0.00	1.77	1.77
Total of 2008	511.55	25.23	1.77	538.55
Net Change	0.00	0.00	0.00	

Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
ETURUNAGARAM Range						
Chintaguda	1134.77	0.00	498.59	503.82	1002.41	47.33
Chittayal	2125.15	0.00	1055.33	828.17	1883.5	19.73
Etur	1004.46	0.00	316.42	553	869.42	47.32
Iylapur	2693.89	0.00	1579.16	815.56	2394.72	19.97
Kondai(n)	1763.4	0.00	1256.37	539.22	1795.59	4.07
Kondai(s)	1297.48	0.00	794.01	500.96	1294.97	10.49
Mallial(n)	1969.07	0.00	1367.69	561.64	1929.33	18.97
Mallial(s)	2362.56	0.00	1241.94	756.42	1998.36	78.22
Sarvai(n)	1680.28	0.00	676.03	776.96	1452.99	32.09
Sarvai(s)	1618.84	0.00	560	904.04	1464.04	55.51

Yelshatpally	1442.69	0.00	849.41	578.86	1428.27	10.63
Total	19092.6	0.00	10194.95	7318.65	17513.6	344.33
KOTHAGUDA-I RANGE						
Ankannaguda	1168.5	0.00	468.8	695.87	1164.67	11.17
Konapur	1506.63	0.00	50.03	1313.94	1363.97	157.69
Kondapur	487.39	0.00	161.56	314.18	475.74	13.67
Medapally	2083.65	0.00	588.21	1003.05	1591.26	148.42
Ootai	2627.63	0.00	455.66	2014.89	2470.55	140.54
Pathipelly	1556.5	0.00	373.22	1083.52	1456.74	64.39
Ponugondla	1851.91	0.00	641.93	1178.23	1820.16	39.47
Rampur	2472.51	0.00	1054.54	1458.1	2512.64	20.28
Sarvapur	2327.33	0.00	242.11	2020.78	2262.89	87.4
Total	16082.1	0.00	4036.06	11082.56	15118.6	683.03
KOTHAGUDA-II RANGE						
Doravarivempally	2444.36	0.00	590.19	1773	2363.19	51.34
Karlai	2687.54	0.00	420.03	1492.23	1912.26	87.25
Ootla	1275.05	0.00	491.2	735.5	1226.7	17.37
Total	6406.95	0.00	1501.42	4000.73	5502.15	155.96
TADWAI RANGE						
Chinnaboinapally	1180.05	0.00	530.4	648.87	1179.27	23.01
Dodla	2904.37	0.00	1521.15	797.96	2319.11	42.51
Heerapur	1258.11	0.00	611.76	653.84	1265.6	10.86
Kamaram	2755.4	0.00	1283.16	1464.11	2747.27	50.67
Medaram	1349.29	0.00	874.23	465.85	1340.08	7.05
Oorattam	920.1	0.00	651.13	256.6	907.73	5.28
Tadawai	2055.48	0.00	723.16	1089.54	1812.7	126.13
Total	12422.8	0.00	6194.99	5376.77	11571.8	265.51
Division Total	54004.4	0.00	21927.42	27778.71	49706.1	1448.83

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



44. Chittoor East Division

Introduction: Chittoor East Forest Division lies in the south of Andhra Pradesh and Eastern Part of Chittoor District, between latitudes 13° 1' 7.32" and 13° 55' 28.56" N and longitudes 78° 46' 50.88" and 80° 03' 10.44" E. The Geographical Area of the Division is 6,769.18 Km², which constitutes 44.58 % of the total area of the District. The Eastern Ghats are predominant in the western region and they gradually bend towards the sacred Sheshachalam hills of Tirupati i.e east division, passing through Chandragiri erstwhile taluk and entering into Nellore district. There is a plateau of average height of 800 m MSL. The Division having easternghats an altitude of 1152.70 m. The rivers flowing in the division are non-perennial in nature and the important rivers are Bheema river which is a tributary of river Swarnamukhi which rises in the Eastern Ghats of the district and finally enters into Nellore district. Other important rivers are the Pincha Nadi, the Tumbur kona, the Kalangi, the Arani, the Ponnai.

Table 44.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	6769.18	
Forest including Scrub	1809.48	26.73
Agriculture	3371.05	49.80
Land with Scrub	903.77	13.35
Fallow Lands	299.68	4.43
Grasslands	30.62	0.45
Settlements	24.06	0.36
Vegetation outside forest	121.06	1.79
Rivers/Streams/tanks	209.45	3.09

Landuse pattern of the division is given in **Table 44.1**. The climate of this Division is healthy and pleasant. The temperatures ranging from 12°C to 36°C and the rain fall of the division is occur under both, the South-West and North-East Monsoon Periods. Annual rainfall is about 880 mm (average of past 12 years), only 450 mm is received from the South-West Monsoon and the Critical rain fall is stunted and open type of vegetation in this division. The major portion of the division is covered by red loamy and sandy soils with portions of alluvial soil. The soils in the division constitute sandy loamy 55%, sandy clay loams 30% to 32% clay soils 3% and the balance soils are Red clay soils and block sandy soils.

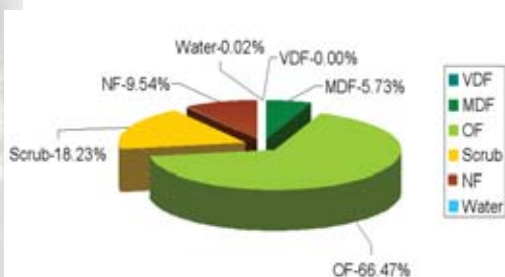
The population of the Division is 1.696 million (2001 Census), which consists of 0.854 million males and 0.842 million females, which constitutes 45.29% of the total population of the District. The per capita forest area is 0.14 ha. The Population density is 251 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 2452.08 Km², which is 36.22% of the total geographical area. Reserved, Protected Forests Constitute 1976.68 Km² (80.61%), 475.4 Km² (19.39%) of the total forest area respectively.

As per Champion and Seth's classification, the Forests of Division fall under Dry tropical South Indian dry mixed deciduous forests, Southern cutch thorn forest groups & Tropical dry evergreen forests Forest types.

Protected Area: The Division is one of the three constituent Divisions of WLM Tirupathi. In the forests of this division at present wild animals like tiger and panther (*Panthera pardus*) are present in small numbers.

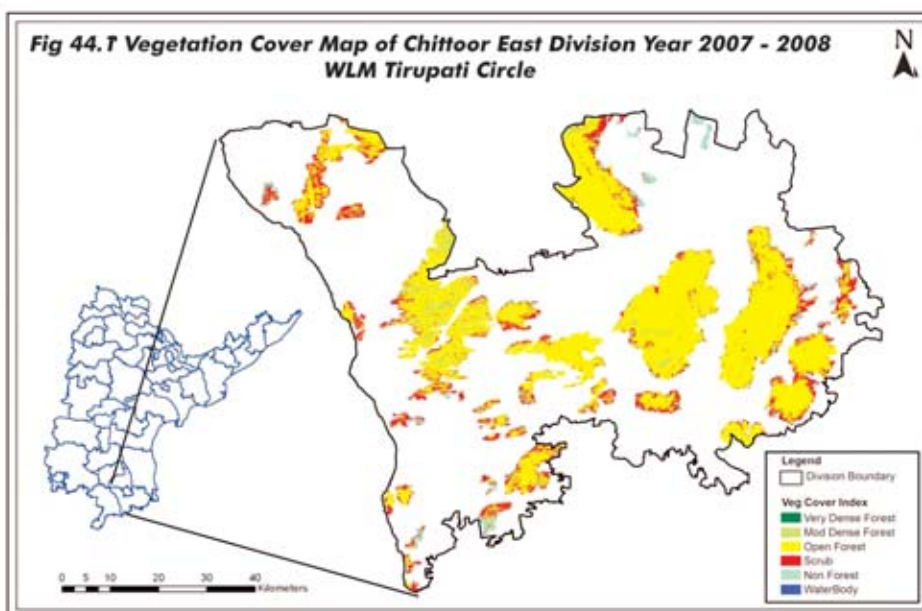
Community Forest Management: There are 225 **Forest Protection Committees (FPCs)** or **Vana Samrakshana Samities (VSSs)** in the Division. An area of 567.7 Km² forests which constitutes 28.37 % of the notified forests is under the management of the VSSs.



Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008 - Feb 2009) is 1444.29 Km², which is 21.34% of the total Geographical area. In terms of the forest canopy density classes the Division has 0.02 Km² of Very Dense Forest, 114.71 Km² of Moderately Dense Forest, and 1329.56 Km² of Open Forest. The area of the Scrub is 364.9 Km², Non-Forest 191.67 and Water Bodies 0.45 Km². The Distribution of the forest cover of the division is shown in **Figure 44.2**.

- The **distribution of Forest Cover** in the CFM areas is as follows- 0.02 Km² in Very Dense Forests, 16.83 Km² in Moderately Dense Forests, and 315.22 Km² in Open Forest, The area of the Scrub is 139.14 Km², 84.23 Km² is Non-Forest and 0.17 Km² is Waterbodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008 - Feb 2009) with that of previous assessment (Satellite Imagery of Nov 2007- Feb 2008) shows a



Net loss of 69.92 Ha of forest cover during the period of one year. • The **change matrix**, given in Table 4.44.2 reveals that there has been a decrease of 0.70 Km² of Open Forest. • The simplified forest cover change matrix is given in **Table 44.3** and **Table 44.4**. • On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reasons for decrease in forest cover is due to encroachments and clearance for rising of plantations. • There are **78 Beats** in the division. There are no changes in Forest cover in 72 Beats. There is Negative change in 5 Beats and Positive Change in 1 Beat. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 44.5**.

Table 44.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007 - Feb 2008)	2008 (Data of Dec 2008 – Feb 2009)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.02	0.00	0.00	0.00	0.00	0.00	0.02
Moderately Dense Forest	0.00	114.71	0.00	0.00	0.00	0.00	114.71
Open Forest	0.00	0.00	1329.50	0.00	0.76	0.00	1330.26
Scrub	0.00	0.00	0.06	364.9	0.00	0.00	364.9
Non-Forest	0.00	0.00	0.00	0.00	190.91	0.00	190.97
Water	0.00	0.00	0.00	0.00	0.00	0.45	0.45
Total of 2008	0.02	114.71	1329.56	364.9	191.67	0.45	2001.31
Net Change	0.00	0.00	-0.70	0.00	0.70	0.00	0.00

Table 44.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007 - Feb 2008)	2008 (Data of Dec 2008 – Feb 2009)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1444.29	0.70	0	1444.99
Degraded Forest		555.87	0	555.87
Water	0	0	0.45	0.45
Total of 2008	1444.29	556.57	0.45	2001.31
Net Change	-0.70	0.70	0	

2007 (Data of Nov 2007 - Feb 2008)	2008 (Data of Dec 2008 – Feb 2009)			Total of 2007
	Green	Barren	Water	
Green	1809.19	0.70	0	1809.89
Barren		190.97	0	190.97
Water	0	0	0.45	0.45
Total of 2008	1809.19	191.67	0.45	2001.31
Net Change	-0.70	0.70	0	

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
BHAKRAPET Range							
Bhakrapet	14306.2	0	589.93	1,798.07	2,388.00	0.00	218.7
Devarakonda	11590.52	0	921.3	693.83	1,615.13	0.00	103.52
Ganugapenta	8178.64	0	470.04	1,385.01	1,855.05	0.00	605.12
Mangalampet	6711.23	0	539.37	2,253.53	2,792.90	0.00	683.49
Marella	16889.77	0	0.64	923.18	923.82	0.00	670.01
Mellacheruvu	4798.61	0	2.13	1,153.99	1,156.12	0.00	345.48
Peddamalla	12955.17	0	1.1	368.91	370.01	0.00	873.1
Pudipatlabailu	16366.7	0	67.21	771.09	838.3	0.00	766.58
Talapula	17070.84	0	2.93	1,404.61	1,407.54	-11.85	1,320.61
Ustikayalapenta	8990.5	0	33.46	2,515.30	2,548.76	-2.44	936.55
Vagalla	17731.2	0	1.96	1,155.48	1,157.44	0.00	1,090.36
Total	135589.39	0	2630.07	14423	17053.07	-14.29	7613.52
CHITTOR Range							
Bommasamudram	5141.38	0	6.66	455.08	461.74	0.00	704.66
Chasses Hills	12611.6	0	2.56	705.84	708.4	0.00	321.15
Chittoor	9255.29	0	0	431.29	431.29	0.00	381.63
Kasipentla	2531.86	0	288.58	1,260.01	1,548.59	0.00	305.19
Mungilipattu	3893	0	904.71	1,750.75	2,655.46	0.00	256.86
Nendragunta	8757.84	0	622.91	1,536.44	2,159.35	0.00	251.13
Oddepalli	4120.58	0	294.52	1,195.90	1,490.42	0.00	396.12
Pachigunta	9515.92	0	0	69.08	69.08	0.00	285.47
Panapakam	3201.66	0	558.29	1,666.07	2,224.36	0.00	303.15
Pathagunta	6463.92	0	245.22	1,324.46	1,569.68	0.00	358.23
Penumur	6417.69	0	28.85	497.89	526.74	0.00	669.61
Puthalapattu	21284.2	0	3.55	260.79	264.34	0.00	1,000.23
Total	93194.94	0	2955.85	11153.6	14109.45	0.00	5233.43
KARVETINAGAR Range							
Allamadugu	15345.92	0	0	1,133.24	1,133.24	0.00	1,264.43
Amudala	8397.27	0	4.69	384.74	389.43	0.00	917.17
G.V.Puram	11262.11	0	1.03	1,350.01	1,351.04	0.00	644.39
Karvetinagar	2012.75	0	75.9	1,145.62	1,221.52	0.00	53.03
Nissankadurgam	8907.95	0	1.85	590.5	592.35	-1.25	746.56

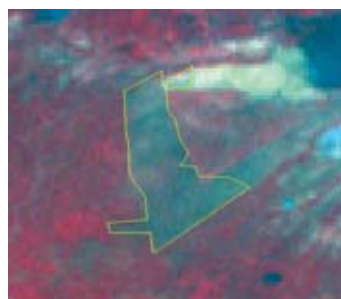
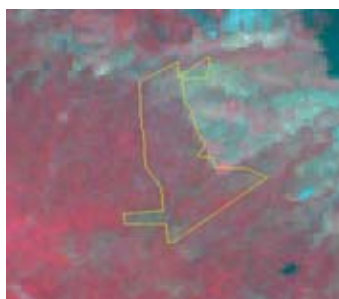
Palasamudram	9503.24	0	3.41	2,267.56	2,270.97	0.00	1,130.81
R.K.M.Puram	3744.31	0	218.61	1,571.12	1,789.73	0.00	47.12
Rayalacheruvu	11685.11	0	14.21	1,246.35	1,260.56	0.00	479.47
Srpuram	8431.84	0	9.37	1,881.83	1,891.20	0.00	897.23
Suredranagar	6279.44	0	3.58	1,000.29	1,003.87	6.30	227.74
Total	85569.93	0	332.65	12571.26	12903.91	5.05	6407.95
PUTTUR Range							
Battikandriga	8334.88	0	46.21	1,438.51	1,484.72	0.00	32.4
Diguvaputtur	6461.93	0	225.41	3,077.88	3,303.29	0.00	187.82
Gullur Puttur	4430.52	0	26.91	1,672.26	1,699.17	0.00	169.14
Nagari	23459.64	0	42.07	1,973.29	2,015.36	0.00	1,307.15
Padiredu Gollapalle	4334.97	0	22.62	2,216.36	2,238.98	0.00	93.39
Palamangalam	5013.47	0	253.53	1,478.49	1,732.02	0.00	237.66
Puttur Moolapalem	5209.34	0	414.46	2,187.01	2,601.47	0.00	138.88
Taduku	4350.16	0	301.34	1,783.60	2,084.94	0.00	260.73
Vadamalpet	4912.54	0	459.45	2,487.77	2,947.22	0.00	198.42
Vagathur	5303.73	0	119.87	2,971.18	3,091.05	0.00	109.97
Total	71811.18	0	1911.87	21286.35	23198.22	0.00	2735.55
SATYAVEDU Range							
Ambakam	10247.05	0	122.09	4,350.72	4,472.81	0.00	1,226.58
Bhupatheeswarapuram	6035.27	0	65.62	4,068.30	4,133.92	0.00	410.54
Kadur	15300.46	0	0	985.86	985.86	0.00	1,383.65
Kambakam	8370.98	0	38.88	3,777.33	3,816.21	0.00	548.65
Nagalapuram	10163.9	0	322.39	3,279.26	3,601.65	0.00	212.61
Nandanam	3736.91	0	13.7	2,469.99	2,483.69	0.00	776.92
Pandur	5395.99	0	9.78	1,251.34	1,261.12	0.00	1,014.39
Pulikundram	20097.94	0	170.83	2,471.17	2,642.00	0.00	352.03
S.K.Madugu	6155.75	0	219.41	2,581.44	2,800.85	0.00	329.78
Satyavedu	8367.7	0	24.09	2,747.59	2,771.68	0.00	303.18
Vanallur	4405.36	0	0	1,373.88	1,373.88	0.00	548.66
Total	98277.31	0	986.79	29356.88	30343.67	0.00	7106.99
SRIKALAHASTI Range							
Adavaram	4841.14	0.69	235.63	3,407.48	3,643.80	0.00	62.16
Anjur	6736.12	0	3.05	1,786.11	1,789.16	0.00	430.24
Chintalapalem	9570.76	0	19.63	1,357.78	1,377.41	0.00	423.63
Kalathur	3814.87	1.68	154.75	1,974.38	2,130.81	0.00	162.59
Kalavagunta	4553.96	0	183.69	1,815.42	1,999.11	0.00	616.22
Kandlur	7441.02	0	3.55	2,717.69	2,721.24	0.00	197.28
Kasaram	11449.71	0	0.76	2.19	2.95	0.00	33.47
Katur	16936.14	0	90.86	1,366.59	1,457.45	0.00	310.19
Kukkambakam	3144.06	0	31.41	1,562.66	1,594.07	0.00	473.89
Kuntipudi	4829.86	0	24.49	2,178.20	2,202.69	-34.50	254.27
Mannavaram	6928.89	0	451.13	798.53	1,249.66	-26.18	722.85
Melachur	6275.24	0	78.34	2,695.93	2,774.27	0.00	364.18
Ramapuram	25289	0	34.28	2,396.45	2,430.73	0.00	120.88



Thimmasamudram	3865.55	0	157.75	1,948.37	2,106.12	0.00	124.6
Total	115676.31	2.37	1469.32	26007.78	27479.47	-60.68	4296.46
TIRUPATI Range							
Balakrishanapuram	4602.48	0	14.21	1,055.77	1,069.98	0.00	859.79
Bhimavaram	8325.54	0	566.28	2,054.06	2,620.34	0.00	339.21
Chellur	10723.98	0	60.91	1,905.63	1,966.54	0.00	173.2
Dornakambala	4226.95	0	400.96	1,634.72	2,035.68	0.00	407.59
Krishnapuram	12909.7	0	50.89	3,317.86	3,368.75	0.00	109.64
Musalipedu	5342.12	0	43.94	1,810.13	1,854.07	0.00	190.38
Napier North	1970.24	0	13.01	1,556.89	1,569.90	0.00	43.47
Napier South	1882.01	0	12.58	1,764.64	1,777.22	0.00	36
Tondawada	10925.43	0	13.32	1,395.59	1,408.91	0.00	294.94
Yerpedu	15890.5	0	8.43	1,731.59	1,740.02	0.00	638.43
Total	76798.95	0	1184.53	18226.88	19411.41	0.00	3092.64
Grand Total	676918	2.37	11471.08	133025.75	144499.2	-69.92	36486.53

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007

2008

Longitude	79.53277
Latitude	13.79698
Area_Ha	34.50
Class	OF TO NF
Comp_No	187
Beat	Kuntipudi
Range	Srikalahasti
Division	Chittoor East



45. Tirupathi WLM Division

Tirupathi Circle

Introduction: Tirupathi WLM Division area includes portion area of Chittoor district and portion area of Kadapa district. It lies in the south of Andhra Pradesh between latitudes 13° 36' 18" and 13° 56' 55.68" N and longitudes 79° 07' 51.96" and 79° 30' 18.36" E. The Geographical Area of the Division is 755.17 Km².

Land use pattern of the division is given in **Table 45.1**.

The climate of this Division is generally dry with temperatures ranging from 16° C to 45°C and the annual rainfall is about 934 mm, received mainly from northeast monsoons.

The total **population** of the division is 0.334 million (2001 Census). The Per capita forest area is 0.22 ha. The population density is 250 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 714.33 Km², which is 98.38% of the total geographical area.

Table 45.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	755.17	
Forest including Scrub	689.81	91.34%
Agriculture	0.00	0.00%
Land with Scrub	3.82	0.51%
Fallow Lands	35.73	4.73%
Grasslands	0.00	0.00%
Settlements	4.39	0.58%
Not available for cultivation	19.18	2.53%
Rivers/Streams/tanks	2.31	0.31%

As per Champion and Seth's classification, the Forests of Division fall under Dry tropical South Indian, dry mixed deciduous forests, dry deciduous, Southern catch thorn forest groups & Tropical dry evergreen forests Forest types. Its most important species is the famous pterocarpus santalinus or red sanders.

Protected Area: The Division is one of the constituent Divisions of WLM Tirupathi. In the forests of this division at present wild animals like tiger and panther (*Panthera pardus*) are present in small numbers.

Community Forest Management: There are 42 **Forest Protection Committees (FPCs)** or Vana Samrakshna Samities (VSSs) in the Division. An area of 107.44 Km² forest which constitutes 15.04 % of the notified forests is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 494.96 Km², which is 68.10% of the total Geographical area. In terms of the forest canopy density classes the Division has 3.16 Km² of Very Dense Forests, 86.64 Km² of Moderately Dense Forests, 405.16 Km² of Open Forest. The area of the Scrub is 194.85 Km², Non-Forests 22.10 Km² and water Bodies 2.41 Km². The distribution of the forest cover of the division is shown in **Figure 45.1**.

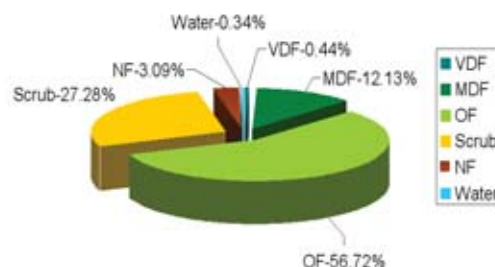
- The **distribution of Forest Cover** in the CFM areas is as follows - 0.88 Km² in Very Dense Forests, 15.31 Km² in Moderately Dense Forest, 54.35 Km² in Open Forest. The area of the Scrub is 22.63 Km², 7.23 Km² is Non-Forest and 0.2 Km² is Waterbodies.

- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Nov 2007) shows no change in forest cover during the period of one year.

- The **change matrix**, given in **Table 45.2** reveals that there is no change in forest cover.

- The **simplified forest cover change matrix** is given in **Table 45.3** and **Table 45.4**.

- Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 45.5**.



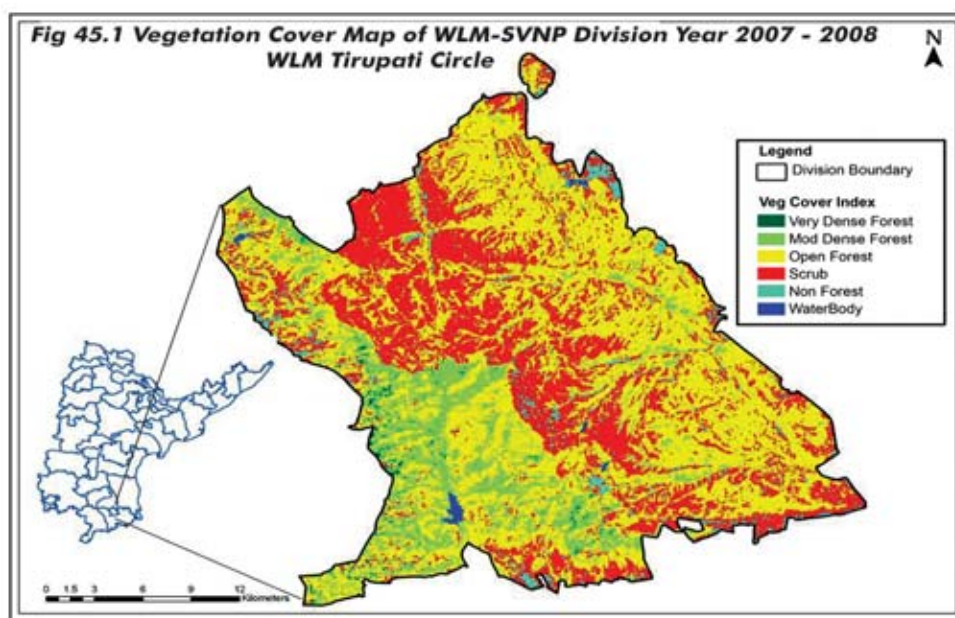


Table 45.2: Forest Cover change matrix

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	3.16	0.00	0.00	0.00	0.00	0.00	3.16
Moderately Dense Forest	0.00	86.64	0.00	0.00	0.00	0.00	86.64
Open Forest	0.00	0.00	405.16	0.00	0.00	0.00	405.16
Scrub	0.00	0.00	0.00	194.85	0.00	0.00	194.85
Non-Forest	0.00	0.00	0.00	0.00	22.10	0.00	22.10
Water	0.00	0.00	0.00	0.00	0.00	2.41	2.41
Total of 2008	3.16	86.64	405.16	194.85	22.10	2.41	714.32
Net Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 45.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	494.96	0.00	0	494.96
Degraded Forest		216.95	0	216.95
Water	0	0	2.41	2.41
Total of 2008	494.96	216.95	2.41	714.32
Net Change	0.00	0.00	0	

Table 45.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	689.81	0.00	0	1809.89
Barren		22.10	0	22.10
Water	0	0	2.41	2.41
Total of 2008	689.81	22.10	2.41	714.32
Net Change	0.00	0.00	0	

Table 45.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Very dense forest	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHAMALA Range							
Chalmala East	4297.12	12.37	1,369.35	2,812.13	4,193.85	0.00	145.25
Chalmala West	3383.84	116.38	1,870.73	1,319.53	3,306.64	0.00	109.70
Nagapatla East	3943.19	5.79	901.97	2,269.77	3,177.53	0.00	658.55
Nagapatla West	4003.43	66.27	1,389.05	2,175.95	3,631.27	0.00	217.15
Talakona Central	3539.73	3.20	387.17	2,088.76	2,479.13	0.00	840.87
Talakona North	2031.97	8.78	455.15	1,197.84	1,661.77	0.00	276.32
Talakona South	1968.24	82.62	788.14	884.20	1,754.96	0.00	181.35
Total	23167.52	295.41	7161.56	12748.18	20205.15	0.00	2429.19
TIRUPATHI Range							
Alipiri	1340.91	0.00	42.89	571.06	613.95	0.00	664.94
Karakambadi	3047.23	0.00	10.29	1,920.50	1,930.79	0.00	1,014.28
Mamandur North	1917.57	0.00	52.49	1,500.21	1,552.70	0.00	339.43
Mamandur South	3000.95	0.00	48.99	2,401.23	2,450.22	0.00	538.02
Papavinasanam	2591.48	0.00	58.28	980.89	1,039.17	0.00	1,409.46
Perumallapalli	1806.86	20.93	423.89	893.59	1,338.41	0.00	436.29
T.N.Palem	1680.89	0.00	3.67	965.34	969.01	0.00	607.81
T.N.Palem Central	1566.98	0.00	84.39	1,197.47	1,281.86	0.00	282.34
Tirumala	3761.60	0.00	116.76	559.30	676.06	0.00	364.04
Total	20714.48	20.93	841.65	10989.59	11852.17	0.00	5656.61
BALAPALLY Range							
Balapalli West	2793.60	0.00	250.69	2,193.31	2,444.00	0.00	376.11
Dasettipalli	3137.36	0.00	40.44	2,281.51	2,321.95	0.00	855.06
Gundampenta	2582.47	0.00	12.54	700.14	712.68	0.00	1,905.10
Gunjana	3898.01	0.00	27.30	2,430.36	2,457.66	0.00	1,503.93
Gunjana North	2713.76	0.00	53.26	1,562.10	1,615.36	0.00	798.43
Gunjana South	2707.57	0.00	124.69	2,271.82	2,396.51	0.00	348.21
Kangimadugu	3202.72	0.00	67.57	2,046.60	2,114.17	0.00	1,163.66
Mogilipenta	4682.06	0.00	76.41	2,038.69	2,115.10	0.00	2,611.23
Papanasanam	3005.45	0.00	8.21	1,253.76	1,261.97	0.00	1,837.14
Total	28723.00	0.00	661.11	16778.29	17439.40	0.00	11398.87
Grand Total	72605.00	316.34	8664.32	40516.06	49496.72	0.00	19484.67

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.



46. Rajampet Division

Introduction: Rajampet Forest Division lies in the South Part of Kadapa District, between latitudes 13° 46' 45" and 14° 23' 35" N and longitudes 78° 44' 44" and 79° 28' 22" E. The Geographical Area of the Division is 3,027 Km², which is 19.71% of the total area of the District. The Division is having an altitude of 378.7 m. The rivers Penna, Chitravathi, Kundu, Papaghni, Sagileru, Mandya, Gunjaneru and Cheyyeru falling in Division. Land use pattern of the Division is given in Table 46.I.

Table 46.1: Land use Pattern

Land use	Area in Sqkm	Percentage
Total geographical area	3027	
Forest including Scrub	1397.35	46.16
Agriculture	845.79	27.94
Land with Scrub	185.17	6.12
Fallow Lands	382.88	12.65
Grasslands	6.00	0.20
Settlements	7.65	0.25
Orchids	158.72	5.24
Rivers/Streams/water bodies	43.43	1.43

The climate of this Division is generally dry with temperatures ranging from 28° C to 45°C and the annual rainfall is about 700 mm with uneven isolated rains received mainly from South-west monsoons.

The soil of the Division is mainly red ferruginous soil and black soil. These two classes can be sub divided into clay, loam sand with finer distinctions. They range from poor to fertile. Red soils occupy most of the division area and are under cultivation. These soils have a low nutrient status. The minerals like Barytes, China clay, White clay, Copper, Manganese Black Granite and lime stone are available.

The total **population** of the Division is 0.466 million

(2001 Census). The Per capita forest area is 0.31 ha. The population density is 154 persons per Km².

Recorded Forest Area: The total notified forest area of the Division is 1,437.03 Km², which is 47.47% of the total geographical area. Reserved and Un-classed Forests Constitute 1,410.71 Km² (98.17%), and 26.32 Km² (1.83%) of the total forest area.

As per Champion and Seth's classification, the Forests of Division fall under dry deciduous forest type. Its most important species is the famous pterocarpus santalinus or red sanders. Since this is the only district of the country in which this species occurs, a positive conservation to extend them has been evolved. These forests fall under three zones wise those of Teral or Fuel Forests upto an elevation of hundred feet, Hill Forests or Red Sanders lying between the elevation of 800 and 2000 feet and Shoreaeugenla occupying elevations above 2000feet.

Protected Area:The Division is one of the three constituent Divisions of WLM Tirupathi and entire notified forest area is included in PA.

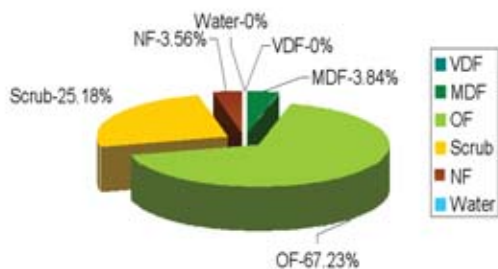
Community Forest Management: There are 178 Vana Samrakshana Samities (VSSs) in the Division. An area of 445.55 Km² forests which is 31% of the notified forests, is under the management of the VSSs.

Forest Cover: The forest cover in the Division based on the interpretation of IRS P6 LISS III 2008 data (Dec 2008) is 1031.88 Km², which is 34.11% of the total Geographical area. In terms of the forest canopy density

classes the Division has 55.71 Km² of Moderately Dense Forest and 976.17 Km² Open Forest. The area of the Scrub is 363.3 Km², Non-Forest 53.85 Km² and Water Bodies 2.91 Km².

• The **distribution of the forest cover** of the division is shown in Figure 46.I.

• The **distribution of the Forest cover** in the CFM areas is as follows - 4.12 Km² in Moderately Dense Forests, 125.76 Km² in Open Forest, 112.61 Km² in Scrub, 35.03 Km² in Non-Forest and 0.08 Km² in Waterbodies.

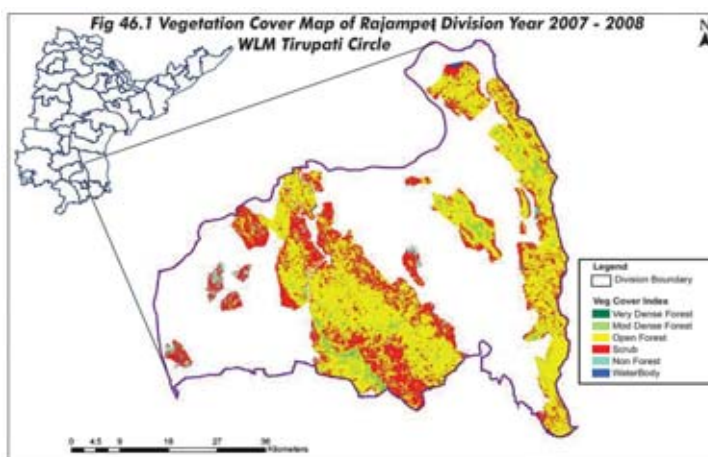


- **Comparison** of the current forest cover (Satellite data of Dec 2008) with that of previous assessment (Satellite Imagery of Nov - 2007) shows a net gain of 6.4 Ha of forest cover during the period of one year.

- The **change matrix**, given in **Table 46.2** reveals that there has been an increase of 0.06 Km² of open forest.

- The simplified forest cover change matrix is given in **Table 46.3** and **Table 46.4**.

- On the basis of ground truthing conducted by the officers of the Geomatics Center and the field officers, the main reason for decrease in



the forest cover is due to encroachments and clearance for rising of plantations. • There are **32 beats** in the division. Negative change in forest cover is seen in only 1 beat, positive change in 2 beats and no change in 31 beats. • Beat wise forest cover in 2008 in different forest canopy density classes and scrub along with the changes compared to 2007 assessment is given in **Table 46.5**.

Table 46.2: Forest Cover change matrix (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)						Total of 2007
	VDF	MDF	OF	Scrub	NF	Water	
Very Dense Forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Moderately Dense Forest	0.00	55.71	0.00	0.00	0.00	0.00	55.71
Open Forest	0.00	0.00	976.02	0.02	0.07	0.00	976.11
Scrub	0.00	0.00	0.00	363.16	2.37	0.00	365.53
Non-Forest	0.00	0.00	0.15	0.12	51.40	0.00	51.68
Water	0.00	0.00	0.00	0.00	0.00	2.91	2.91
Total of 2008	0.00	55.71	976.17	363.3	53.85	2.91	1451.94
Net Change	0.00	0.00	0.06	-2.23	2.17	0.00	0.00

Table 46.3: Forest Cover change matrix (Good and Degraded Forest) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)			Total of 2007
	Good Forest	Degraded Forest	Water	
Good Forest	1031.81	0	0	1031.82
Degraded Forest	0.06	417.15	0	417.21
Water	0	0	2.91	2.91
Total of 2008	1031.88	417.15	2.91	1451.94
Net Change	0.06	-0.06	0	

Table 46.4: Forest Cover change matrix (Rejuvenation and Barren) (Area in Km²)

2007 (Data of Nov 2007)	2008 (Data of Dec 2008)			Total of 2007
	Green	Barren	Water	
Green	1395.18	2.17	0	1397.35
Barren	0	51.68	0	51.68
Water	0	0	2.91	2.91
Total of 2008	1395.18	53.85	2.91	1451.94
Net Change	-2.17	2.17	0	



Table 46.5: Beat wise Forest Cover (Area in Ha)

Beat	Geographical Area	Mod. dense forest	Open forest	Total	Net Change*	Scrub
CHITVEL Range						
C.M.Rachapalli	8940.06	50.08	3263.59	3313.67	0.00	784.14
Chitvel	24982.32	792.13	5802.4	6594.53	-6.87	1858.42
Chukkavaripalli	9901.72	61.24	2643.91	2705.15	0.00	820.36
Kondur	12841	172.92	3176.19	3349.11	0.00	477.38
Kottur	12119.02	97.32	4857.64	4954.96	0.00	1732.8
Mallelamadugu	6053.46	258.77	2918.49	3177.26	0.00	275.43
Rajukunta	8286.79	459.45	4190.9	4650.35	0.00	829.97
Salivendala	4364.77	65.37	2244.95	2310.32	0.00	546.84
Venkataramapalli	6419.91	15.19	3737.62	3752.81	0.00	1167.95
Total	93909.06	1972.49	32835.68	34808.17	-6.87	8493.29
KODUR Range						
Balapalli	2992.18	32.56	1983.99	2016.55	3.70	564.98
Chiyavaram	5166.09	88.61	3157.6	3246.21	0.00	84.19
Gadela	3227.87	120.13	2308.6	2428.73	0.00	1172.59
Gundampenta	2481.46	0	5.57	5.57	0.00	3.36
K.v.bhavi_north	14659.69	149.4	3662.94	3812.34	0.00	752.44
K.v.bhavi_south	3020.48	52.25	2600.43	2652.68	0.00	660.81
Kodur	7555.36	226.82	2829.18	3056	0.00	501.86
M.bhavi	10452.57	15.15	1848.52	1863.67	0.00	1216.21
N.g.penta	2627.83	50.78	1512.87	1563.65	0.00	1394.3
Settigunta	7263.7	12.52	1369.6	1382.12	0.00	216.74
Ummethala	2826.53	8.01	1298.75	1306.76	0.00	1878.29
Total	62273.77	756.23	22578.06	23334.29	3.70	8445.77
RAJAMPET Range						
Akepadu	9065.27	0	898.24	898.24	0.00	1337.76
Annasamudram	4737.11	44.7	2650.31	2695.01	0.00	1120.8
Arimanipenta	2914.11	85.47	2042.88	2128.35	0.00	1151.01
B.d.bhavi	3447.89	301.71	3099.08	3400.79	0.00	471
C.c.kunta	5890.32	15.51	2245.06	2260.57	0.00	1116.39
Rachavaripalli	8337.47	0	220.87	220.87	0.00	1023.27
Renuthala	8422.21	46.04	3005.6	3051.64	0.00	1022.63
Rollamadugu	4342.37	51.86	4117.63	4169.49	0.00	623.02
S.r.palem	5760.64	6.35	1630.92	1637.27	9.57	906.32
T.bailu	4518.47	222.96	4412.73	4635.69	0.00	444.25
Vattalur	3359.27	29.87	1667.82	1697.69	0.00	399.39
Total	60795.12	804.46	25991.12	26795.58	9.57	9615.83
SANIPAYA Range						
Dinnela	2350.92	566.7	1500.49	2067.19	0.00	248.83
Jandrapenta	5236.92	44.9	2604.8	2649.7	0.00	929.42
Jillelamanda	4449.75	126.62	2034.63	2161.25	0.00	383.64
Mudumpadu	10763.09	683.69	1423.18	2106.87	0.00	269.38

Forest division-wise results

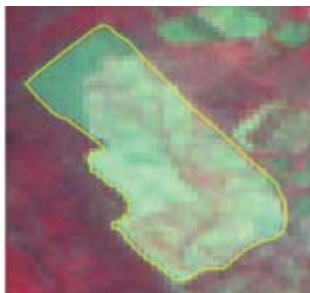
Polimerapalli	6448.58	0	10.36	10.36	0.00	699.59
Rayavaram	8678.36	513.95	2632.87	3146.82	0.00	1218.14
Sanipaya	4105.67	22.65	2044.47	2067.12	0.00	1263.7
T.sundupalli	26667.04	0.79	208.7	209.49	0.00	1760.52
Vanarajupalli	5464.43	71.29	2285.5	2356.79	0.00	1021.46
Veeraballi	11557.29	6.87	1460.87	1467.74	0.00	2203.68
Total	85722.05	2037.43	16205.88	18243.31	0.00	9998.35
Division total	302700	5570.61	97610.74	103181.35	6.40	36553.24

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Satellite Imageries



2007



2008

Longitude	79.29004
Latitude	14.19183
Area	54.9 ha.
Class	Scrub to NF
Compartment No.	1053
Beat	Chitvel
Range	Chitvel
Division	Rajampet



Red sanders forest of Rajampet





Chapter - V Forest Cover Statistics in Protected Areas

5.1. Introduction

India, being situated in the tropical region, harbors a rich Bio-Diversity. With just 2% of the world's land area, India supports about 10% of the world's Biological Diversity making it the 7th richest Bio-Diversity country in the world. This distinction bestows a great responsibility on the Government to protect and conserve its rich Floral, Faunal and Ecological Diversity. This is sought to be done by establishing a network of Protected Areas. The term Protected Areas is commonly used to describe areas of Ecological and Biological importance like Wildlife Sanctuaries, National Parks, Zoos, Game reserves etc. An area qualifies to be declared as Protected Area when it bears some floral or faunal species of great significance, which needs to be conserved or has an ecological system, which is fragile and needs to be protected. India is one of the 12 mega-biodiversities of the world (CBD).

The Andhra Pradesh state has coastline of about 1000 km. The State has wide and varied vegetation types enriched by a variety of flora and fauna. Andhra Pradesh being located strategically in the central region of the Indian sub-continent has representatives of the magnificent Indian plant and animal life. Its varied topography ranging from the hills of Eastern Ghats and Nallamallas to the shores of Bay of Bengal supports varied ecotypes, which in turn support a rich diversity of flora and fauna. The vegetation found in the state is largely of dry deciduous type with a mixture of Teak, Terminalias, Dalbergias, Pterocarpus, Anogeissus etc. The hills of Eastern Ghats add greatly to the Biological Diversity and provide centers of endemism for plants, birds and lesser forms of animal life. The varied habitat harbors a diversity of fauna which includes Tiger, Panther, Wolf, Wild Dog, Hyena, Sloth Bear, Gaur, Black Buck, Chinkara, Chowsingha, Nilgai, Cheetal, Sambar and a number of Birds and Reptiles. The long sea coast provides the nesting ground for sea turtles, the back waters of Pulicat lake are the feeding grounds for Flamingo and Grey Pelican, the estuaries of river Godavari and Krishna support rich mangrove forests with Fishing Cat and Otters as key-stone species. The State is a proud possessor of some rare and endemic plants like *Cycas beddomei*, *Pterocarpus santalinus*, *Terminalia pallida*, *Syzygium alternifolium*, *Shorea talura*, *Shorea tumburgia*, *Psilotum nudam* etc. Similarly, the Double banded or the Jerdon's Courser, the Golden Gecko, and the Slender Loris are rare and endangered, and are endemic to the State.

5.2. Protected Area Network in AP

The State has 26 Protected Areas – 21 Wildlife Sanctuaries, 4 National Parks and 1 Tiger Reserve i.e. Nagarjuna Sagar – Srisailem Tiger Reserve (NSTR), the biggest Tiger Reserve of India. Out of 63814 Km² of notified forest area, 15214.52 Km² is included in the PA network, covering about 23.84% of notified forest area and 5.53% of Geographical area of the State.

The State with its rich forests and diverse flora and fauna provides ample scope for promoting Eco-Tourism. The natural beauty of the state has not been exposed to the visitors till now. The Government has drawn up a plan to open up the Protected Area Network of the State for visitors. Each of the Wildlife Sanctuary and National Park of the State has its own significance and has something unique to offer to the visitors.

5.3. Forest Cover in Protected Areas

The forest cover in the Protected areas based on the interpretation of IRS P6 LISS III 2008 data (October 2007 to March 2008), is 10440.27 Km², i.e. 3.8% of the Geographical area. In terms of the forest canopy density classes the State has 180.00 Km² of Very Dense Forest, 4268.89 Km² of Moderately Dense Forest and 5991.38 Km² of Open Forest. The area of the Scrub is 2779.07 Km², Non-Forest 1107.01 Km² and Water Bodies 888.18 Km².

Comparison of the forest cover of 2008 (Satellite data of October 2008 to March 2009) with that of 2007 (Satellite data of October 2007 to March 2008), shows a net loss of 2.39 Km² of forest cover. Maximum habitat loss of 1.71 Km² has occurred in Kinnerasani WLS and the least loss of 0.02 Km² in Papikonda WLS. There is no change of habitat in 21 Protected Areas

Protected Area wise forest cover in different forest canopy density classes along with the changes compared to 2007 assessment is given in **Table 5.1**.

No. Sanctuary Name	VDF	MDF	OF	Net Change	SF	NF	WB**	Total
1 ETURNAGARAM WLS	0.00	417.93	350.51	0.00	22.91	75.21	4.11	870.67
2 GBM WLS	28.38	760.07	295.30	0.00	52.59	17.93	0.95	1155.21
3 KAMBALAKONDA WLS	0.00	26.20	38.01	-0.13	11.78	3.91	0.12	80.00
4 KAWAL WLS	14.84	713.60	535.17	-0.04	34.33	29.28	5.25	1332.47
5 KBR_NP	0.00	0.04	0.03	0.00	1.11	0.25	0.00	1.43
6 KINNERASANI WLS	1.54	228.37	293.32	-1.71	177.96	109.26	15.28	824.72
7 KOLLERU LAKE WLS	0.04	18.34	68.36	0.00	43.33	21.30	26.16	177.52
8 KORINGA WLS	12.87	89.26	13.99	0.00	1.91	6.23	125.56	249.81
9 KOUNDINYA WLS	0.01	112.96	453.47	0.00	190.50	57.57	0.99	815.50
10 KRISHNA WLS	0.00	0.00	80.14	0.00	66.80	49.64	121.82	318.39
11 LANKAMALLESWARA WLS	0.11	158.06	233.05	0.00	102.85	11.43	0.10	505.61
12 MAHAVIR HARINA VANASTHALI_NP	0.00	0.18	0.55	0.00	11.95	2.39	0.00	15.07
13 MANJEERA WLS	0.00	2.40	5.52	0.00	5.35	2.89	10.72	26.88
14 CHILKUR MRUGAVANI_NP	0.00	0.00	0.04	0.00	4.48	0.45	0.00	4.97
15 NELAPATTU WLS	0.00	0.03	5.05	0.00	1.20	3.22	0.07	9.57
16 NSTR WLS	1.08	731.90	1970.32	-0.10	1371.70	350.98	96.36	4522.28
17 PAKHAL WLS	0.00	96.28	277.84	0.00	25.59	100.96	17.42	518.09
18 PAPIKONDA WLS	79.97	636.56	111.05	-0.02	20.54	5.25	3.23	856.60
19 PENISULA WLS	0.00	84.51	799.79	0.00	321.56	28.13	37.55	1271.54
20 POCHARAM WLS	38.19	82.89	13.38	0.00	7.63	0.13	0.16	142.39
21 PRANAHTA WLS	0.00	22.48	17.45	-0.40	23.27	4.94	0.24	68.38
22 PULICAT LAKE	0.09	2.33	41.54	0.00	87.66	205.39	420.33	757.35
23 RAJIVGANDHI_NP	0.00	0.00	0.30	0.00	1.81	1.71	0.00	3.82
24 ROLLAPADU WLS	0.00	0.00	0.01	0.00	0.04	5.16	0.00	5.21
25 SHIVARAM WLS	0.00	4.00	19.17	0.00	16.12	0.76	0.04	40.09
26 SRI VENKATESWARA WLS	2.87	80.02	367.13	0.00	175.28	13.93	1.71	640.94
Total	180.00	4268.89	5991.38	-2.39	2779.07	1107.01	888.18	15214.52

** Water Bodies inclusive of outside notified forests in Pulicat & Kolleru Lake, Koringa WLS etc.

*Net Change in Forest Cover Only i.e., VDF, MDF and OF to Scrub and Non-Forest between 2007 and 2008.



Table 5.2: Changes in all Classes

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	1042	-14754.94	306	-4714.09	56	-272.68
Positive	112	1846.52	60	926.19	10	156.92
Net Change	1154	-12728.42	366	-3787.90	66	-116.76

Table 5.3: Change in Forest Cover (VDF, MDF, OF to SF and NF)

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	881	-11530.93	238	-3434.79	52	-256.29
Positive	40	739.69	14	118.88	1	17.40
Net Change	921	-10791.24	252	-3315.91	53	-238.89

The change from DF to OF and vice versa as well as Scrub to NF and vice versa are not considered as changes in the forest cover, because of marginal difference. However, details there of are furnished here under:

Table 5.4: Changes between DF and OF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	7	-48.12	2	-14.75	0	0.00
Positive	5	24.38	2	5.43	0	0.00
Net Change	12	-23.74	4	-9.32	0	0.00

Table 5.5: Changes between SF and NF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	154	-3025.89	66	-1264.55	4	-17.39
Positive	67	1082.45	44	801.88	9	139.52
Net Change	221	-1943.44	110	-462.67	13	95.24





Chapter - VI Forest Cover Statistics in VSSs

6.1. Introduction

Andhra Pradesh is one of the pioneering Forest Departments in India in implementation of Community Forest Management (CFM). Joint Forest Management (JFM) was introduced in AP in 1994, as a means of protecting forests, to improve their productivity and to alleviate rural poverty, by following the national JFM model being used in most of the States at that time. This strategy proved effective in restoring forest cover in degraded forest lands, and improved access to the forest resources by communities living in forest fringe areas. Considering the potential of the forests to contribute towards poverty alleviation, the Government of Andhra Pradesh adopted a proactive stance by transforming JFM into CFM during 2002.

The difference between JFM and CFM is that while JFM uses participation of communities mainly for forest protection, by giving them the access to non-timber forest products and modest benefit-sharing in timber, with their limited involvement in forest management. CFM aims to improve forests both in coverage and productivity by empowering VSSs to take more autonomous decisions regarding the management and use the forest resources in livelihood development. This means a greater devolution of power and responsibilities to VSSs in planning, management and decision making on the forest areas marked for the VSSs, at the same time redefining roles of APFD frontline staff to act as facilitators. It is important to note that Andhra Pradesh is the only State which has adopted CFM and provided 100% of gross revenue generated from the VSS forest areas with a minimum of 50% of it being required to be ploughed back in forest development works, as per the key strategy to address the use of forest resources for poverty alleviation.

6.2. Joint Forest Protection Committee (JFPCs)

There are 7,718 Vana Samrakshana Samities (VSSs) or JFPCs in the State. 15,199.8 Km² forest area, which constitutes 23.8 % of forest area, is under CFM. 1539 thousand members are involved in CFM which includes 465 thousand members belonging to Scheduled Tribes and 323 thousand members belonging to Scheduled castes.

6.3. Forest Cover in VSS Areas

The forest cover in the VSS areas based on the interpretation of IRS P6 LISS III 2008 data (October 2008 to March 2009), is 9324.89 Km², which is 3.39% of the Geographical area. In terms of the forest canopy density classes the State has 76.79 Km² of Very Dense Forest, 3783.31 Km² of Moderately Dense Forest and 5431.61 Km² of Open Forest. The area of the Scrub is 3796.23 Km², Non-Forest 2064.09 Km² and Water Bodies 47.97 Km².

Comparison of the forest cover of 2008 (Satellite data of October 2008 to March 2009) with that of 2007 (Satellite data of October 2007 to March 2008), shows a net loss of 33.16 Km² of forest cover.

Division wise forest cover in different forest canopy density classes along with the changes compared to 2007 assessment is given in **Table 6.1**.

The 15 VSSs, where the forest cover was lost the most (VDF, MDF, OF, Scrub) are:

Kothapalli (BCM N), Yatlakunta (KMM), Arlagudem (BCM N), Madhapur (HYD), N. Rachapalli (Rajampet), Kommugudem (PAL), Nakalapally (Rajampet), Rajapuram (KMM), Y.kota (A.W) (Rajampet), Bheemunigudem (KMM), Adurupalli (NLR), Puttupalli (NYL), Oosapalli (NLR), Abbugudem (KTDM) and Ootlapally-a (KMM).



The 15 VSSs, where the forest cover was gained the most (VDF, MDF, OF, Scrub) are: Nagavaripalem, Pulikallu, Adurupalli, Thimmayapalem, Inkurthi, Gundavolu, Nagavaripalem, Chouta bheemavaram, Nagavaripalem, Aakalivalasa, Pulikallu and Ramakuru of Nellore division; Gaddamallaiahgud of Hyderabad division; Magatur ST thanda of Markapur division and Malapadu of Giddalur division.

Table 6.1: Division wise Forest Cover in VSS areas 2008 (Area in Km²)

No.	Division Name	VDF	MDF	OF	Net Change	SF	NF	WB**	Total
1	Achampet	0.01	42.35	102.64	0.00	83.94	4.42	3.60	236.96
2	Adilabad	1.10	112.25	157.87	0.00	39.61	48.06	0.45	359.34
3	Anathapur	0.00	0.35	78.83	0.00	241.93	307.14	0.11	628.36
4	Atmakur	0.02	8.30	30.13	0.00	19.34	76.40	1.12	135.31
5	Bellampally	2.33	100.62	71.58	0.00	12.56	19.42	0.41	206.92
6	Bhadrachalam North	0.01	31.05	44.26	-5.54	27.70	15.47	0.33	118.82
7	Bhadrachalam South	0.90	35.16	37.33	-0.11	11.85	1.54	0.09	86.87
8	Chittoor East	0.02	17.20	321.67	-0.40	142.17	86.46	0.17	567.69
9	Chittoor West	0.00	34.60	202.75	0.00	150.99	73.45	0.71	462.50
10	Eluru	0.03	263.16	103.62	-7.08	28.12	19.55	0.06	414.54
11	Giddalur	0.15	10.11	35.54	0.00	114.79	123.37	3.12	287.08
12	Guntur	0.00	0.00	25.05	0.00	199.88	33.88	1.99	260.80
13	Hyderabad	0.00	65.18	115.06	-0.80	163.48	8.74	1.03	353.49
14	Jannaram WLM	1.67	56.81	55.79	0.00	3.95	2.53	1.28	122.03
15	Kadapa	0.00	11.24	180.78	-0.06	169.93	31.92	0.21	394.08
16	Kagaznagar	3.95	62.70	51.83	-0.08	15.16	14.43	0.34	148.41
17	Kakinada	61.19	905.65	89.21	-0.53	54.39	27.26	10.35	1148.05
18	Kamareddy	0.00	83.59	177.43	0.00	34.97	28.38	1.28	325.65
19	Karimnagar East	0.00	382.67	171.82	-0.31	60.37	6.91	0.45	622.22
20	Karimnagar West	0.00	120.53	118.70	-0.51	83.57	9.61	1.30	333.71
21	Khammam	0.10	47.82	99.27	-3.67	68.54	22.26	0.76	238.75
22	Kothagudem	0.00	26.31	104.69	-1.83	70.68	36.78	0.17	238.63
23	Kurnool	0.00	0.02	111.00	0.00	138.82	142.52	0.27	392.63
24	Mahabubnagar	0.00	13.74	246.34	-0.19	223.82	1.43	0.09	485.42
25	Mancherial	0.56	47.88	55.42	0.13	21.08	12.23	0.51	137.68
26	Markapur WLM	0.28	39.87	119.15	0.00	134.22	53.42	0.21	347.15
27	Medak	0.00	69.29	361.20	-0.47	181.49	14.83	1.02	627.83
28	Medak WLM	0.00	20.57	22.89	0.00	4.03	2.69	0.03	50.21
29	Nagarjunasagar	0.00	2.88	44.66	0.00	106.66	21.87	0.15	176.22
30	Nalgonda	0.00	0.21	23.31	0.00	134.37	55.54	0.32	213.75
31	Nandyal	1.29	62.55	51.57	-1.44	20.41	30.06	0.96	166.84
32	Narsipatnam	0.87	99.35	96.17	-0.08	20.14	14.60	0.00	231.13
33	Nellore	0.00	6.44	115.08	-0.48	264.78	208.18	1.34	595.82
34	Nellore TGP	0.00	0.16	9.66	0.00	28.89	11.35	0.06	50.12
35	Nirmal	0.29	107.46	123.07	-0.08	29.26	21.74	0.68	282.50
36	Nizamabad	0.00	131.37	184.07	-0.38	46.53	40.88	2.54	405.39
37	Paderu	0.29	40.21	133.14	-0.02	59.73	46.44	0.00	279.81
38	Paloncha	0.34	53.07	150.56	-5.26	60.98	19.13	0.16	284.24
39	Paloncha WLM	0.44	60.22	76.89	-1.04	41.07	18.58	2.13	199.33
40	Proddatur	0.01	46.02	148.83	0.00	154.34	105.41	1.77	456.38
41	Rajampet	0.00	4.29	131.00	0.10	117.20	36.36	0.08	288.93
42	Srikakulam	0.00	41.44	189.19	-0.25	41.48	15.57	2.54	290.22
43	Tirupathi WLM	0.94	16.35	58.05	0.00	24.17	7.72	0.21	107.44
44	Vijayawada	0.00	0.04	27.45	-0.55	46.03	6.97	0.88	81.37
45	Visakhapatnam	0.00	102.91	114.18	-0.21	34.93	19.71	0.22	271.95
46	Vizianagaram	0.00	172.64	117.88	-1.18	13.74	10.65	0.02	314.93
47	Warangal North	0.00	107.31	149.94	-0.84	18.89	55.56	0.67	332.37
48	Warangal South	0.00	85.57	138.02	0.00	27.66	87.03	1.19	339.47
49	Warangal WLM	0.00	33.80	57.04	0.00	3.59	5.64	0.59	100.66
	Total	76.79	3783.31	5431.61	-33.16	3796.23	2064.09	47.97	15200.00

*Net Change in Forest Cover Only, i.e. VDF, MDF and OF to Scrub and Non-Forest between year 2007 and 2008.

Table 6.2: Changes in all Classes

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
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Table 6.3: Change in Forest Cover (VDF, MDF, OF to SF and NF)

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
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Negative	881	-11530.93	238	-3434.79	52	-256.29
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The change from DF to OF and vice versa, as well as Scrub to NF and vice versa, are not considered as changes in the forest cover, because of marginal difference. However, details there of are furnished here under:

Table 6.4: Changes between DF and OF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	7	-48.12	2	-14.75	0	0.00
Positive	5	24.38	2	5.43	0	0.00
Net Change	12	-23.74	4	-9.32	0	0.00

Table 6.5: Changes between SF and NF

Change	Entire Notified Forest Areas		VSS Areas		Protected Areas	
	No. of Points	Area-ha	No. of Points	Area-ha	No. of Points	Area-ha
Negative	154	-3025.89	66	-1264.55	4	-17.39
Positive	67	1082.45	44	801.88	9	139.52
Net Change	221	-1943.44	110	-462.67	13	95.24

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Glossary of Technical Terms

Allowable Error: A systemic error that is 'acceptable', both statistically and analytically. The amount of error that can be tolerated without invalidating the usefulness of the analytic result.

AWIFS: Advanced Wide Field Sensor

Band: A wavelength interval in the electromagnetic spectrum. For example, in IRS images the bands designate specific wavelength intervals at which images are acquired.

Calibration: Process of comparing an instrument's measurements with a standard.

Classification: Process of assigning individual pixels of an image to categories, generally on the basis of spectral reflectance characteristics.

Classification accuracy: The extent to which a manual or automatic processing system correctly identifies selected classes.

Color Composite Image: Color image prepared by projecting individual black-and-white multi-spectral images, each through a different color filter. When the projected images are superposed, a color composite image results.

Confidence Interval: A confidence interval (CI) is a particular kind of interval estimate of a population parameter. Confidence intervals are used to indicate the reliability of an estimate. How likely the interval is to contain the parameter is determined by the confidence level or confidence coefficient. Increasing the desired confidence level will widen the confidence interval, however the estimated value will be away from the absolute value.

Consumer's accuracy: It is a measure of the reliability of an output map generated from a classification scheme. It is a statistic that can tell the user of the map what percentage of a class corresponds to the ground-truthed class.

Contrast: The ratio between the energy emitted or reflected by an object and its immediate surroundings.

Contrast enhancement: Image-processing procedure that improves the contrast ratio of images. The original narrow range of digital values is expanded to utilize the full range of available digital values.

Contrast ratio: On an image, the ratio of reflectance's between the brightest and darkest parts of an image.

Contrast stretching: Expanding a measured range of digital numbers in an image to a larger range, to improve the contrast of the image and its component parts.

Density slicing: Process of converting the continuous gray tones of an image into a series of density intervals, or slices, each corresponding to a specific digital range. The density slices are then displayed either as uniform gray tones or as colors.

Digital Image Processing: Computer manipulation of the digital-number values of an image.

Digital Number (DN): Value assigned to a pixel in a digital image

Error Matrix: A matrix or table that displays statistics for assessing image classification accuracy by showing the degree of misclassification among classes.

Errors of Commission: Pixels incorrectly assigned to a particular class that actually belong in other classes.

Errors of Omission: Pixels incorrectly excluded from a particular class.

False color image: An image produced by displaying multiple spectral bands as colors different from the spectral range they were taken in. A color image where parts of the non-visible EM spectrum are expressed as one or more of the red, green, and blue components, so that the colors produced by the Earth's surface do not correspond to normal visual experience. Also called a false-color composite (FCC). The most commonly seen false-color images display the very-near infrared as red, the red as green, and the green as blue.

Forest: Land with tree crown cover (or Equivalent stocking level) of more than 10 % and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ. May consist of either closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground, or open forest formations with a continuous vegetation cover, in which tree crown cover exceeds 10 %. Young natural stands and all plantations established for forestry purposes which have yet to reach above criteria are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention or natural causes but which are expected to revert to forest.

Forest Canopy Density: Forest Canopy Density (FCD) refers to the proportion of an area in the field/ground that is covered by the crown of trees and is expressed in percentage of the total area.

Forest Type: Forest type is defined as a unit of vegetation which possess broad characteristics in physiognomy and structure sufficiently pronounced to permit its differentiation from other such units (Champion & Seth 1968)

Geographic Information System (GIS): A computer based system for capturing, storing, manipulating, analyzing and displaying data, which are spatially referenced to the earth.

Global Positioning System (GPS): The Global Positioning System (GPS) is a space-based global navigation satellite system. It provides reliable positioning, navigation, and timing services to worldwide users on a continuous basis in all weather, day and night, anywhere on or near the Earth which has an unobstructed view of four or more GPS satellites.

Good Forest and Degraded Forest: Good Forest includes VDF, MDF and OF; degraded forest includes Scrub and Non- Forest.

Green and Barren: Green includes VDF, MDF, OF and Scrub; Barren includes Non-Forest.

Ground control point (GCP): A geographic feature of known location that is recognizable on images and can be used to determine geometric corrections.

Ground truth: Information acquired by field study for the purpose of calibration and/or verification of remotely sensed data.

Geometric correction: Image-processing procedure that corrects spatial distortions in an image. The geographic correction of image data to conform to a map projection.

Histogram: A means of expressing the frequency of occurrence of values in a data set within a series of equal ranges/bins, the height of each bin representing the frequency at which values in the data set fall within the chosen range. A cumulative histogram expresses the frequency of all values falling within a bin and lower in the range. A smooth curve derived mathematically from a histogram is termed as probability density function (PDF).

Image: A pictorial representation acquired in any wavelength of the electromagnetic spectrum. Although image is a general term, it is commonly restricted to representations acquired by non-photographic methods.

Imagery: The products of image forming instruments.

Interpretation: The process in which a person extracts information from an image.

Interpretation key: Characteristic or combination of characteristics that enable an interpreter to identify an object on an image.

Kappa coefficient: A statistical measure of the agreement, beyond chance, between two maps (e.g. output map of classification and ground-truthed map). It is represented by the symbol kappa hat or K_{hat} .

Mangroves : Salt tolerant ever green forest ecosystem found mainly in tropical and sub – tropical coastal and / or inter tidal regions.

Medium Dense Forest: All lands with forest cover having a canopy density between 70-40%

Multi-spectral classification: Identification of terrain categories by digital processing of data acquired by multi-spectral scanners.

Multi-spectral scanner: Scanner system that simultaneously acquires images of the same scene at different wavelengths.

Mid-infrared (MIR): The range of EM wavelengths from 8 to 14 micrometres dominated by emission of thermally generated radiation from materials; also known as thermal infrared.

NDVI: The Normalized Difference Vegetation Index (NDVI) is defined as the ratio of the difference in the NIR & Red radiance values to the sum of the NIR & Red radiance values.

NDWI: The Normalized Difference Water Index (NDWI) is defined as the ratio of the difference in the SWIR and NIR radiance values to the sum of the SWIR and NIR radiance values.

Near infrared (NIR): The shorter wavelength range of the infrared region of the EM spectrum, from 0.7 to 2.5 m. It is often divided into very-near infrared (VNIR) covering the range accessible to photographic emulsions (0.7 to 1.0m), and the short-wavelength infrared (SWIR) covering the remainder of the NIR atmospheric window from 1.0 to 2.5m.

Noise: Random or repetitive events that obscure or interfere with the desired information.

Open Forest: Lands with forest cover having a canopy density between 40 to 10%.

Overall accuracy: The percentage of correctly classified pixels. It is a good measure of the accuracy of a classification scheme as it is not biased towards the smaller classes.

Path and Row: Path is an approximate specific orbital track of a Satellite which may vary due to drift and other factors. Row refers to the latitudinal center line of a frame of imagery.

Pixel: Contraction of picture element

Producer's accuracy: A measure of the accuracy of a particular classification scheme. It shows what percentage of a particular ground class was correctly classified.

Protected Forest (PF): An area notified under the provisions of the Indian Forest Act or other State Forest Acts, having limited degree of protection. In protected forest all activities are permitted unless prohibited.



Radiometric correction: Calibration of recorded radiance values reflected from (or emitted by) the ground scene.

Radiometric Resolution: The expected spread of variation in each estimate of scene reflectivity as observed in an image. Smaller radiometric resolution is "better". Radiometric resolution for a given image may be improved by averaging, but at the cost of spatial resolution.

Raster format: A means of representing spatial data in the form of a grid of DN, each line of which can be used to modulate the lines of a video raster

Ratio image: An image prepared by processing digital multi-spectral data as follows: for each pixel, the value for one band is divided by that of another. The resulting digital values are displayed as an image.

Remote sensing: Collection and interpretation of information about an object with an instrument without being in physical contact with the object.

Reserved Forests (RF): An area so constituted under the provisions of the Indian Forest Act or other State Forest Acts, having full degree of protection. In Reserved forests all activities are prohibited unless permitted.

SAVI: Soil-Adjusted Vegetation Index. A vegetation index that accounts for, and minimizes, the effect of soil background conditions.

Scene: As the satellite moves along its path, the observatory instruments are continuously scanning the terrain below. The instrument signals are transmitted to Earth and correlated with telemetry ephemeris data to form individual framed images. During this process, the continuous data are segmented into individual frames of data known as scenes

Scrub: Degraded forest lands having canopy density less than 10% and areas with dwarf and stunted growth.

Spatial resolution: Ability to separate closely spaced objects on an image or photograph. A measure of the smallest angular or linear separation between two objects usually expressed in radians or meters.

Spectral resolution: The ability of a sensing system to resolve or differentiate electromagnetic radiations of different frequencies.

Standard Deviation and Variance: In probability theory and statistics, the variance of a random variable or distribution is the expected, or mean, value of the square of the deviation of that variable from its expected value or mean. Thus the variance is a measure of the amount of variation within the values of that variable, taking account of all possible values and their probabilities or weightings (not just the extremes which give the range).

The standard deviation of a statistical population, a data set, or a probability distribution is the square root of its variance. Standard deviation is a widely used measure of the variability or dispersion.

Statistic: A statistic is a single measure of some attribute of a sample (e.g. its arithmetic mean value). It is calculated by applying a function (Statistical algorithm) to the values of the items comprising the sample which are known together as a set of data.

A Statistic as a function of a sample where the function itself is independent of the sample's distribution; that is, the function can be stated before realisation of the data. The term statistic is used both for the function and for the value of the function on a given sample.

Stereo pair: Two overlapping images or photographs that may be viewed stereoscopically.

Supervised classification: Digital-information extraction technique in which the operator provides training-site information that the computer uses to assign pixels to categories

Tone: Each distinguishable shade of gray from white to black on an image

Training area: A sample of the Earth's surface with known properties; the statistics of the imaged data within the area are used to determine decision boundaries in classification.

Training site: Area of terrain with known properties or characteristics that is used in supervised classification.

Tree: A woody perennial with a single main stem, or in the case of coppice with several stems, having a more or less definite crown, having diameter 10 cm or more at breast height (1.37m). If there are stems below 1.37 m height then individual branch/stem which has attained 10 cm DBH will be considered as individual tree. It also includes bamboo, palms, coconut, neem, peepal, fruit trees etc.

Unsupervised classification: Digital information extraction technique in which the computer assigns pixels to categories with no instructions from the operator.

Vegetation Canopy: The layers of vegetation above the level of the ground, formed by the leaves of the plants.

Very Dense Forest: All lands with forest cover having a canopy density more than 70%

Visible radiation: Energy at wavelengths from 0.4 to 0.7mm that is detectable by the human eye.



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About the State Forest Report of 2010...

There is increasing concern at global level for conservation of the existing forests and bringing more area under forest cover. This is required to reduce global warming and atmospheric carbon. To achieve the above objectives, annual forest cover change assessment is essential to pin point areas of deforestation and greening. Various countries in the world like Brazil, Indonesia and African Countries apart from FAO are assessing the forest cover on regular basis. The National Commission on Forestry has also emphasised on the need to assess the forest resources of the country on a regular basis.

The present effort is a step in that direction using LISS-III images of Indian Satellite IRS P6. The effort is of crucial importance because of huge expenditures being proposed under Green India Mission and CAMPA scheme. For the first time, sub Hectare areas are critically scanned in the Geomatics laboratory and checked on the ground by the staff and scientists. It is found that there is near total accuracy as to the location, extent and shape of polygons detected in laboratory and field.

This book, which is first of its kind in the state of Andhra Pradesh, will immensely help the foresters in better protection and management of the forests as well as Environmentalists, NGOs and the general public interested in the conservation forests and wildlife in the State.

