The source of uranium ore is identified at Thummalapalle in YSR Kadapa district, Andhra Pradesh and mining process has been started recently. The study site, Thummalapalle Uranium Mining Area is a 30 km radius from the mining point, which accounts an area of 2827 km². It is having moderately steep hills with ridges and valleys. The area covers two districts of Andhra Pradesh state namely, YSR Kadapa and Anantapur. The geographical coordinates at the mining point are NL 14°19'21.94" and EL 78°15'25.69" (Plate-1). The study area encompassing forest area, agricultural land, barren land and human settlements with nearly 12 mandals and 70 villages of two districts. The elevation of the study site ranges from 190-800m above MSL.

The study area is divided into three zones namely, Core Zone (0 to 5 Km), Buffer Zone-I (6-15km) and Buffer Zone-II (16-30km). North, North-West and North-East corners of the area is mainly with agricultural lands and barren lands. The South, South-West, South-East, West and East corners are with moderate to scare vegetation and also agricultural land.

Climate

The climate can be considered as tropical, semi-arid with more number of sunny days. The winter is short, while summer is long and hot. The beginning of November to the later part of February is the coolest part of the year. After February, temperatures begin to raise rapidly and by up to the second part of May. The temperature fluctuates between 47°C in summer and 20°C in winter. With the onset of monsoon from June, the temperature slowly fall down and the climate is quite pleasant. During the period of South-West monsoon from June to September very strong and high winds blow across the area. Anantapur district is driest district in the state. Kadapa district has high rainfall and better vegetation.
The erratic rainfall is a common phenomenon of the study area. It is due to the geographical situation of the study area is rather unfortunate in that it does not lie definitely within either of the monsoons. The average rainfall loses its significance due to the abnormal variations from year to year. Most of the rainfall is received from South West monsoon.

Drainage

There are no major rivers in the study area. The tributaries of the Penna river, like Sagileru and Maddileru are the main rivulets flow in the study area. All these are annual. Gandi river flows in the Eastern part of the study area in Buffer Zone-II. A good number of annual and perennial streams, ponds, springs and more number of ditches are also located in the area. Yogi Vemana Reservoir is constructed in Buffer Zone-I of the study area. Batrepalli waterfall is one of the most attractive in the area, which is located in Buffer Zone-I, near Kadiri in Anantapur district and it flows in the months of September and November only. Most of the water sources are located in Buffer Zone- I and II. Very few are in Core zone. One of the most important things is that, the water resources are mainly in South, South-East and South-West corners. All the above water resources enrich the fauna and flora of the area.

Geology and Soils

The geographical formations are mainly Cuddapah and Kurnool types and with two types of soils are predominating in the study area i.e. black cotton and red soils. The black cotton soils are mainly seen in agricultural lands and ponds, the red soils are commonly seen in the forests and barren lands. The hillocks in the most of the study area are occupied with huge rock boulders and they are common in the west side and hills with vegetation seen in the east part of the study area.

Habitat and Vegetation

The area encompasses forest, agricultural lands and human settlements. The forests of the Thummalapalle Uranium Mining Area can be categorized into dry deciduous and scrub type.

Dry deciduous type of vegetation is confined to Mudigubba, Dorigallu, Kalasamudram, Batrepalli, Somulabvaripalli and Nigidi of Anantapur district and Kottala,
Thummalapalle, Rachakuntapalli and Idupulapaya of Kadapa district. These forests are dominated with *Acacia catechu*, *Anogeissus latifolia*, *Chloroxylon sweitenia*, *Croton scabiosus*, *Dolichandrane atrovirens*, *Euphorbia antiquorum*, *Grewia flavescens*, *Lannea coromandeliana* and *Terminalia alata*. *Pterocarpus santalinus* a highly valuable and endemic taxon is found in the forests of Idupulapaya. The forests of Kadiri range especially Batrepalli, Kalasamudram, Chinnapalli are the main sources of *Hildegardia populifolia*, an endemic and vulnerable taxon. Scrub type of forests is confined to the peripheries of dry deciduous forests and small hillocks nearby villages. These are dominated with *Euphorbia antiquorum*, *Canthium dicoccum*, *Canthium parviflorum*, *Cassia auriculata*, *Carissa spinarum*, *Dodonea viscosa*, *Prosopis chilensis* and *Rivea hypocrateriformis*. *Heteropogon contortus*, *Chrysopogon fulvus*, *Cymbopogon coloratus*, *Aristida setacea* and *Aristida adscensionis* are the common grasses found in both types. The forests of Batrepalli, Kalasamudram and Thimmammamarrimanu are with large rock boulders and poor soils. These type of the forests are home for various reptiles especially geckos and agamids.

Agricultural lands occupy a large part of the study area. These are mainly non-irrigated and some are irrigated. Groundnut, Rice, Banana, Bengal gram, Mango, Papaya, Citrus and Coriander are the main crops cultivated in the study area. Most of the commercial crops are supplied by drip irrigation method; hence the weed diversity is slowly decreasing.

The main towns in the study area are Kadiri, Pulivendula, Vempalli and nearly 120 villages are situated in the area. The major habitat types and water resources are presented in Plate-2.