

4D3A1n1,n2,n3,n4, 4D3A3j1, j2, j3, j4, s1, s2, s3, s4, s5, s6, s7 & s8 micro-watersheds of Nagarjunasagar Catchment, Taluk Pattikonda of District Kurnool, Andhra Pradesh State.

ABSTRACT

1.	Survey Area	:	4D3A1n1,n2,n3,n4, 4D3A3j1, j2, j3, j4, s1, s2, s3, s4, s5, s6, s7 & s8 micro-watersheds of Nagarjunasagar Catchment, Taluk Pattikonda of District Kurnool, Andhra Pradesh State.
2.	Geographical Extent	:	15° 15' to 15° 41' North Longitude 77° 23' to 77° 57' East Latitude
3.	Agro-climatic Region	:	Southern hill and Plateau region (Zone No. X)
4.	Total Geographical Area Mapped and Reported	:	22137 ha
5.	Kind of Survey	:	Detail Soil Survey using Remote Sensing Techniques
	Base Maps	:	(i) High resolution Satellite Imagery (scale:10,000) as reference map (ii) Enlarged Survey of India Toposheets (scale 1:10,000)
7.	Scale of Mapping	:	1:10,000
8.	Period of Survey	:	January 2014 to April, 2014

S.No	New Micro watershed codes	Total area (in ha)
01	4D3A1n1,n2,n3,n4	5224
02	4D3A3j1,j2,j3,j4	6896
03	4D3A3s1,s2,s3,s4,s5,s6,s7,s8	10,017
		22,137

9. Soil Series identified and their micro watershed-wise distribution of the area (ha).

SOIL SERIES	4D3A1n1	4D3A1n2	4D3A1n3	4D3A1n4	4D3A3j1	4D3A3j2	4D3A3j3	4D3A3j4	4D3A3s1	4D3A3s2	4D3A3s3	4D3A3s4	4D3A3s5	4D3A3s6	4D3A3s7	4D3A3s8	Area_(ha)	Percentage
ADONI	0	0	5	0	11	89	769	442	0	0	0	0	0	4	0	0	1320	6.0
ALARDINNE	47	164	213	58	104	0	0	0	0	0	0	0	0	0	0	0	586	2.6
BADANEHALLU	32	61	0	13	409	373	0	160	36	105	56	6	4	0	189	21	1465	6.6
BHAIRAVAKONDA	0	0	0	0	0	20	249	0	0	0	0	0	0	0	0	0	269	1.2
ERIGERI	0	0	0	0	0	81	0	0	0	0	0	0	0	0	0	0	81	0.4
HEBBATAM	119	93	282	653	844	913	0	0	605	855	1318	1017	861	1260	680	841	9538	43.1
NAYAKALLU	12	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	16	0.1
NELLATALAMARI	0	0	0	0	0	0	83	0	0	0	0	0	0	0	0	0	83	0.4
PEDDGONAHALLU	0	0	0	18	208	259	238	297	0	0	0	0	0	40	0	0	1060	4.8
RATANA	0	0	20	0	112	158	30	129	0	0	0	0	0	47	31	0	527	2.4
SANTEKALLURU	703	621	453	755	0	219	116	0	0	0	0	0	0	0	31	11	2909	13.1
TUMBALABIDU	0	0	113	0	20	99	30	57	0	0	0	0	0	0	0	0	319	1.4
TUGGALLI	0	0	0	35	45	0	0	0	73	234	233	324	248	252	134	348	1926	8.7
TOVI	0	0	240	0	62	170	200	212	0	0	0	0	0	0	0	0	884	4.0
YALAMAKURU	0	0	0	0	92	17	0	0	0	0	0	0	0	0	0	0	109	0.5
Misc.	76	103	161	170	96	124	48	114	32	1	64	51	5	0	0	0	1045	4.7
Grand Total	989	1042	1487	1706	2072	1650	1763	1411	746	1195	1671	1398	1118	1603	1065	1221	22137	100.0

11. Salient features

- The survey area comprises mainly of soils developed on granite geology followed by alluvium landscape
- Physiographically the survey area is divided into six major physiographic units viz. Hill side slopes, Isolated hillocks/subdued Hills, Pediment, Upper pediplains, Lower pediplains, Alluvial plains and Point bar complex.
- Soils of the survey area have been classified under three orders namely Entisols, Inceptisols and Vertisols as per Soil Taxonomy.
- It is observed that out of the total surveyed area, 1639 ha (7%) is covered by shallow soils, 1153 ha (5.02%) by moderately deep, 3969 ha (18%) by deep soils and 14,331 ha (64%) by very deep soils.
- An area of 5339ha (23.55%) is under very gentle slope nearly level and an area of 11 ha (0.1%) have been terraced, 14,152 ha (64.78%) under gently sloping, moderately to strongly sloping is 399 ha (1.8%) and moderately steep to steep area is 1185 ha (5.3%).
- Area under slight erosion is 11 ha only, moderate erosion is 17263ha (79.91%) and severe erosion is 3816 ha (17%).
- Nearly 23 percent of the surveyed area has been classified under land capability class II, 53 percent under class III, eight percent under class IV, 4 percent under class VI and 5 percent under class VII.

How to use soil survey report

The report encompasses the detailed account of various characteristics of the surveyed area like physiography, relief, geology, climate, natural vegetation, land use and soils. It provides comprehensive information on the soils of the area with their classification, distributional pattern and inter-relationships. Detailed description of the soil series identified in the survey area and the interpretation of different soil mapping units for various applied aspects of agricultural development, such as land use planning and water management, soil conservation are given in relevant chapters. Different problems of the area have been depicted and corrective measures have also been suggested.

Broad outline - This report comprises of nine chapters -

Chapter 1 deals with introduction and background information about the soil survey.

Chapter 2 describes the physical and environmental setting of the area i.e. geology, climate, natural vegetation, socio-economic condition, present land use and pattern of agriculture.

Chapter 3 and 4 cover the procedural details e.g. soil survey methodology, description and characteristics of soils.

Chapter 5 deals with distribution area under different soil series and phases.

Chapter 6 deals with soil formation with their genetic aspect and classification.

Chapter 7 deals with Interpretation of Soil Analytical Data.

Chapter 8 presents various interpretative groupings of soils derived from the database of the soils and land characteristics collected during the survey. The potentiality of the soils and ameliorative measures to be adopted for agricultural development has also been discussed.

Chapter 9 deals with Watershed management, suggested planning for land use and area development which may help the user agencies.

Soil and land capability map: The soil and land capability map is appended in this report. Each soil unit delineated on the map is represented by symbolic expression that corresponds with its description in the legend. The abbreviated symbol gives the information about the soil series name, effective soil depth, surface texture, slope and moderate of erosion, rockiness and stoniness as indicated below with an example. Soil mapping unit AD2dFG3SR connotes, 'AD' - 'Adoni' Soil series name; '2'- Shallow soils (depth class); 'd' - Gravelly sandy loam (textural class); 'FG'- Moderately to steep (slope class); '3'- Severe erosion (Erosion class) and 'SR'- Slightly stony and rocky phase.

Guidelines to Users

The area of interest can be located on the map. For the purpose, soil mapping unit and particulars of interpretative groups may be noted down. Details of soil description and various interpretations can be obtained from chapter 5 and 6 respectively. The details of the soil mapping units, their description and interpretative groupings have been depicted in **Appendix-I** (Guide to soil mapping unit). The differentiating characteristics of Soil Series are furnished in **Table 6** and the

typifying pedon from **Appendix-II**. Village wise mapping unit list along with their area of extent, present land use and management status are given in **Appendix-III**.

The analytical methods used for soil analysis, Glossary of technical terms and the symbols used in this report are depicted in **Appendix-IV, V and VI** respectively.

The recommendations and suggestions given in this report are of broad nature. For site specific, detailed field management and treatment, local experience and conditions should be considered by the various users.

For any additional information or clarification contact may be established with-

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