

ABSTRACT

1. Surveyed area	4D5A5h5, h6, h7, h8; 4D5A7a1, a4, a5, a6, a7; 4D5A7b1, b2, b3; 4D5A7d1, d2, d3, d4, d5; 4D5A7f1, f2, f3 and f5 Microwatersheds of 4D5A5 and 4D5A7 watersheds under Nagarjuna Sagar (RVP) in Badamitaluk of Bagalkote district, Kushtagi & Yalburgataluk of Koppal district and Ron taluk of Gadag district, Karnataka State
2. Geographical extent	15°42' to 15°52' N latitude and 75°43' to 76°03' E longitude.
3. Total area surveyed	27,371ha
4. Kind of survey	Detailed Soil Survey using Remote Sensing Techniques.
5. No. of villages in surveyed area	45
6. Period of survey	November- December, 2014.
7. Base map used	Enlarged Toposheets on 1:12,500 scale and High Resolution Satellite Imageries.
8. Toposheet Number	48M09, 48M13, 48M14, 57A01 and 57A02
9. Agro-climatic zone	Ten- Southern Plateau and Hill region

10. Area & Priority status of subwatersheds/ microwatersheds surveyed*

Sl.No	Sub watershed	Microwatersheds	Priority category
1	Aj3j	4D5A5h5, h6, h7, h8	Very Low
2	Aj3n	4D5A7a1, a4, a5, a6, a7	Medium
3	Aj3p	4D5A7b1, b2, b3	Low
4	Aj3r	4D5A7a1, a2, a3, a4, a5	Medium
5	Aj3u	4D5A7f1, f2, f3, f4, f5	Medium

* Report No. AGRI. 864

11. Micro-watershed wise Distribution of area(ha) under different soil series

Micro-Watersheds	Soil Series														Total Area (ha.)	Area (%)
	Benchmati	Bhairapura	Chigala gundi	Dindur	Hosur	Jahhal	Kalliganur	Mallapura	Mushigeri	Nallur	Ron	Rudrapur	Tanda	Misc.		
4D5A5h5	--	1	52	83	389	--	1	51	--	74	157	76	30	57	971	3.55
4D5A5h6	48	--	--	--	876	--	--	--	--	254	43	--	9	63	1293	4.72
4D5A5h7	223	90	--	80	1025	--	--	87	--	140	404	--	145	131	2325	8.49
4D5A5h8	61	113	--	41	286	--	138	205	--	23	36	--	169	40	1112	4.06
4D5A7a1	14	123	6	--	266	169	266	45	122	31	337	209	--	168	1756	6.42
4D5A7a4	20	8	20	--	486	--	17	48	52	61	202	47	2	21	984	3.6
4D5A7a5	1	243	--	--	92	27	35	300	--	132	14	--	207	47	1098	4.01
4D5A7a6	--	--	--	--	92	--	--	--	31	--	202	532	--	48	905	3.31
4D5A7a7	42	--	13	--	433	--	--	17	108	202	75	15	2	14	921	3.36
4D5A7b1	--	--	163	10	284	--	8	0	142	172	318	742	--	71	1910	6.98
4D5A7b2	--	83	104	292	62	91	189	63	2	415	60	61	19	102	1543	5.64
4D5A7b3	1	117	--	303	343	16	185	1	--	--	14	--	303	222	1505	5.5
4D5A7d1	--	--	171	--	265	--	--	--	92	--	41	683	--	74	1326	4.84
4D5A7d2	--	--	73	189	453	--	65	--	--	--	11	39	30	48	908	3.32
4D5A7d3	--	--	198	219	462	--	51	--	--	--	212	582	31	74	1829	6.68
4D5A7d4	--	55	202	146	272	--	28	--	--	--	86	58	152	101	1100	4.02
4D5A7d5	--	76	16	384	276	--	187	1	--	--	--	--	56	95	1091	3.99
4D5A7f1	--	--	208	19	89	--	--	--	--	5	168	577	--	27	1093	3.99
4D5A7f2	--	32	110	34	257	--	34	--	--	47	26	179	20	298	1037	3.79
4D5A7f3	--	24	219	107	741	--	8	--	--	81	172	23	1	44	1420	5.19
4D5A7f5	256	--	--	--	555	--	--	--	--	40	332	--	--	61	1244	4.54
Total Area(ha.)	666	965	1555	1907	8004	303	1212	818	549	1677	2910	3823	1176	1806	27371	100.00
Area (%)	2.43	3.53	5.68	6.97	29.23	1.11	4.43	2.99	2.01	6.13	10.63	13.96	4.3	6.6	100.00	--

12. Series wise Distribution of Area under Various Land Capability Units

Sl.No.	Land Capability Units	Soil Series													Misc.	Total Area (ha)	Area (%)
		Benchmatti	Bhairapura	Chigalagundi	Dindur	Hosur	Jalhal	Kalliganur	Mallapura	Mushigeri	Nallur	Ron	Rudrapur	Tanda			
1	Illes-1	--	431	--	952	6720	--	--	--	549	--	276	--	--	--	8928	32.62
2	Illes-2	--	327	--	--	--	--	--	--	--	627	794	--	--	--	1748	6.39
3	Illes-3	--	--	--	--	--	--	--	--	--	--	--	2766	--	--	2766	10.11
4	IVes-1	--	--	--	955	1284	--	--	--	--	--	1123	--	--	--	3362	12.28
5	IVes-2	--	--	--	--	--	--	--	--	--	--	717	1057	--	--	1774	6.48
6	IVes-3	--	--	--	--	--	196	--	--	--	1050	--	--	--	--	1246	4.55
7	IVes-4	666	--	--	--	--	--	--	--	--	--	--	--	--	--	666	2.43
8	Ves-1	--	--	1555	--	--	--	--	--	--	--	--	--	--	--	1555	5.68
9	Vles-1	--	--	--	--	--	--	722	--	--	--	--	--	--	--	722	2.64
10	Vles-2	--	--	--	--	--	--	--	--	--	--	--	--	1126	--	1126	4.11
11	VIIes-1	--	--	--	--	--	--	--	675	--	--	--	--	--	--	675	2.47
12	Forest	--	207	--	--	--	107	490	143	--	--	--	--	50	--	997	3.64
13	Misc.	--	--	--	--	--	--	--	--	--	--	--	--	--	1806	1806	6.6
Total Area		666	965	1555	1907	8004	303	1212	818	549	1677	2910	3823	1176	1806	27371	100.00
Area (%)		2.43	3.53	5.68	6.97	29.23	1.11	4.43	2.99	2.01	6.13	10.63	13.96	4.30	6.60	100.00	--

13. Micro-watershed wise area under different erosion classes

Sl.No.	Micro watershed code	Erosion classes		Misc.	Total Area (ha.)
		Moderate erosion (e2)	Severe erosion (e3)		
1	4D5A5h5	456	458	57	971
2	4D5A5h6	741	489	63	1293
3	4D5A5h7	1226	968	131	2325
4	4D5A5h8	410	662	40	1112
5	4D5A7a1	723	865	168	1756
6	4D5A7a4	596	367	21	984
7	4D5A7a5	358	693	47	1098
8	4D5A7a6	568	289	48	905
9	4D5A7a7	570	337	14	921
10	4D5A7b1	910	929	71	1910
11	4D5A7b2	755	686	102	1543
12	4D5A7b3	591	692	222	1505
13	4D5A7d1	646	606	74	1326
14	4D5A7d2	679	181	48	908
15	4D5A7d3	1000	755	74	1829
16	4D5A7d4	375	624	101	1100
17	4D5A7d5	547	449	95	1091
18	4D5A7f1	636	430	27	1093
19	4D5A7f2	456	283	298	1037
20	4D5A7f3	754	622	44	1420
21	4D5A7f5	785	398	61	1244
Total Area(ha.)		13782	11783	1806	27371
Percentage of Area		50.35	43.05	6.60	100.00

14. Salient features:-

- Major geology of the surveyed area is Sandstone followed by Alluvium.
- Majority of the surveyed area comprises of very deep soil 17193ha. (62.81%) and deep soils 4197 ha (15.33%) followed by moderate deep soil covering 1515 ha (5.54 %)
- Out of total surveyed area 14852 ha (54.26%) is having 3-5% slope gradient, an area 8683 ha (31.72 %) is having 0-3% slope gradient and the slope gradient 10-15% occupies 1212 ha (4.43%).
- Nearly 13782 ha (50.35 %) out of total surveyed area is affected by moderate erosion hazard whereas an area of 11783 ha. (43.05 %) is affected by severe erosion hazard.
- Majority of the area is under Land Capability Class IIIes-1(8928 ha.) followed by Class IVes-1(3362ha) whereas 997 ha is under forest.

HOW TO USE SOIL SURVEY REPORT

This report 4D5A5h5, h6, h7, h8; 4D5A7a1, a4, a5, a6, a7; 4D5A7b1, b2, b3; 4D5A7d1, d2, d3, d4, d5; 4D5A7f1, f2, f3, f4 and f5 Microwatersheds of 4D5A5 and 4D5A7 watersheds in 4D5A Subcatchment under 4D5 Catchment (NagarjunaSagar- RVP) in Badamitaluk of Bagalkote district, Kushtagi&Yalburgataluk of Koppal district and Ron taluk of Gadag district of Karnataka State contains detailed information about the soils of the area. This information is for various purposes including development of strategies for sustainable agro-production system development for the area. This report provide information on soil for planning cropping schedules, soil and water management programmes including soil conservation practices. The requisite information for desired locality could be obtained from the report as follows:

First, the user needs to locate the area of interest on soil map appended with this report and note the soil-mapping units enclosed by the soil boundary. This identification is done with the help of permanent features like roads, ponds, streams, village site, revenue survey number of the field, etc.

On the soil map, area covered by a soil-mapping unit is marked by a mapping symbol. Each of the soil-mapping unit refers to a particular kind of soil type and its related properties eg. soil depth, surface texture, slope, erosion, gravelliness, stoniness, rockiness. A soil mapping unit having mapping symbol, HR5dB2 indicates:

- a) Abbreviated name of soil series 'HR' for Hosur
- b) Soil depth '5' for very deep soil depth (more than 100 cm)
- c) Soil texture 'd' for sandyloam surface texture
- d) Slope class 'B' for 1-3% slope and
- e) Erosion class '2' for moderate erosion

Detailed information on soil series, profile description and other related soil characteristics is given in **Chapter 4** entitled "Soils of the Area" and in "Description of representative pedons" in **Appendix II**. Soil classification of the soils of the area is done according to the "Soil Taxonomy" (USDA) 2014 and has been provided in **Table 13**.

In **Appendix III** entitled "**Village mapping units under different micro-watersheds**" information on the soil mapping units mapped in the area vis a vis , physiographic position, predominant slope, , soil conservation measures adopted and land capability is given.

In Chapter 7.0 section 7.1 on land capability classification, two types of problems viz. 1) Inherent problem and 2) improvable problem /correctable problems have been listed for each of the land capability unit mapped along with the recommendations for soil conservation, treatment needs and crop production. These recommendations are brief and suggestive but are adequate for broad level watershed management planning. For specific planning and potential for a particular land use of any site or area of interest the user agencies can use their local experiences and knowledge about the area and may make necessary modifications as warranted. General recommendations for the soil and water conservation have been given in **Chapter 8** “specific problems and recommendations”.

For any suggestion, comment, or clarification further correspondence/personal contact may be established with

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