

Report on Detailed Soil Survey and Landuse of Aj3m, Aj5a, Aj5b, Aj5c, Aj5f, Aj5h, Aj7a and Aj7b Subwatersheds of Aj Subcatchment under Nagarjunsagar Catchment (RVP) in Ron Taluk, Gadag district and Badami Taluk, Bagalkot District, Karnataka State Using Remote Sensing Techniques

ABSTRACT

1. Surveyed area : Aj3m, Aj5a, Aj5b, Aj5c, Aj5f, Aj5h, Aj7a and Aj7b Subwatersheds of Aj sub catchment, Nagarjunsagar catchment in Gadag District, Karnataka State
2. Geographical extent : Aj3, Aj5 and Aj7 watersheds lies between 15°36' to 15°51' N latitude and 75°31' to 75°48' E longitude
3. Total area mapped and surveyed : 32096 ha.
4. Kind of survey : Detailed Soil & Landuse survey using Remote Sensing Techniques
5. No. of villages surveyed : 14
6. Period of survey : February, 2012 to March, 2012
7. Base map used: : Enlarged Quadrant wise Toposheets on 1:12,500 Scale and IRS-P6, LISS IV Satellite Imageries
8. Toposheet Nos used : 48M09, 48M10, 48M13 and 48M14
9. Agroclimatic zone : Zone 10 (Southern Plateau and Hill region)

10. Sub watersheds surveyed and corresponding codes as per new Karnataka Microwatershed Atlas

Sl. No	Subwatershed codes	Subwatershed codes as per new Karnataka MWA	Micro watersheds covered in the subwatershed as per Karnataka MWA
1.	Aj3m	4D5A7a (part)	4D5A7a2, 4D5A7a3, 4D5A7a8
2.	Aj5a	4D5A8a(part)	4D5A8a1, 4D5A8a2
3.	Aj5b	4D5A8a (part)	4D5A8a3, 4D5A8a7, 4D5A8c2 (part)
4.	Aj5c	4D5A8a (part)	4D5A8a4, 4D5A8a5, 4D5A8a6
5.	Aj5f	4D5A8c & b (part)	4D5A8c1, 4D5A8c4, 4D5A8b1 (part)
6.	Aj5h	4D5A8d & c (part)	4D5A8d1, 4D5A8d2, 4D5A8c4 (part)
7.	Aj7a	4D5B1a (part)	4D5B1a1, 4D51a2, 4D5B1a3, 4D5B1a4, 4D5B1a5
	Aj7b	4D5B1a (part)	4D5B1a6, 4D51a7, 4D5B1a8

11. Serieswise distribution of area (ha) under different subwatersheds

EIMU	Aj3m	Aj5a	Aj5b	Aj5c	Aj5f	Aj5h	Aj7a	Aj7b	AREA	Percentage
Dhanksirur (DS)	207	49	0	0	0	213	251	326	1046	3.3
Dyampur (DY)	217	119	91	77	102	582	267	0	1455	4.5
Hirehal (HR)	379	0	0	0	0	0	0	0	379	1.2
Hunugundi (HG)	0	167	0	497	0	0	0	0	664	2.1
Ron (RN)	378	153	536	207	144	324	412	420	2574	8.0
Kuruhatti (KH)	130	80	0	256	0	0	0	0	466	1.5
Lakshmapur (L)	1059	350	1104	490	642	1410	1121	727	6903	21.5
Mainahalli (M)	0	34	0	112	150	425	115	0	836	2.6
Nainapur (NP)	26	125	0	31	0	0	0	0	182	0.6
Thimmapur (T)	1950	1398	2414	1646	1406	2365	3561	1980	16720	52.1
Misc	169	69	138	58	69	146	76	146	871	2.7
Total	4515	2544	4283	3374	2513	5465	5803	3599	32096	100.0

12. Soil Series mapped and area (ha) under different Land capability classes

Sl. No	Land capability classes	Area (Ha)	Percentage	Soil Series
1	II	8791	27.3	Hirehal, Kuruhatti, Nainapur, Lakshmapur
2	III	11581	36.1	Dhanksirur, Dyampur, Mainahalli, Hunugundi, Hirehal, Kuruhatti, Thimmapur, Ron
3	IV	10853	33.9	Dyampur, Ron, Thimmapur, Mainahalli
4	Misc	871	2.7	
	Total	32096	100.0	

13. Sub watershed wise area under different erosion classes and their percentage

Sl.No	Subwatershed codes	Erosion Classes	
		e2	e3
1	Aj3m	3486	860
2	Aj5a	1740	735
3	Aj5b	2570	1575
4	Aj5c	2196	1120
5	Aj5f	1429	1015
6	Aj5h	3344	1975
7	Aj7a	3297	2430
8	Aj7b	2310	1143
	Total	20372	10853
	Percentage	63.5	33.8

14. Specific problems of the area and subwatershedwise extent:

S. No.	Specific problems	Sub-watershed code							
		Aj3m	Aj5a	Aj5b	Aj5c	Aj5f	Aj5h	Aj7a	Aj7b
1	Moderate erosion on slope 1-3% on shallow to moderately deep soils		19				37	115	
2	Moderate erosion on slope 1-3% on deep to very deep soils	2802	1318	1885	1306	1195	2430	2183	1680
3	Moderate erosion on >3% slope on deep to very deep soils	835	403	1772	890	234	877	1114	630
4	Severe erosion on deep to very deep soils	709	735	488	1120	1015	1975	2315	1143
5	Stoniness & Gravelliness		143		386				
	Problematic area (ha)	4346	2618	4145	3702	2444	5319	5727	3453
	Total (ha)	31754							
	Misc.	871							
	Total Problematic area (ha)	32685							
	Subwatershed area	32096							

(Note: An area of 529 hectares is having more than one inherent problem. so this 529 hectares accounted only once with the total surveyed area of 32,096 hectares)

12. Salient features:-

a. Majority of the area i.e., 27709 ha (86.3%) area is under very deep soils while 2016 ha (6.3%) is under deep soils and moderately deep soils constitutes 1500 ha i.e., 4.7% of the total surveyed area.

b. Out of the total mapped area 17066 ha (53.2%) area is under very gently sloping lands while 14159 ha (44.1%) area is under gently sloping lands.

c. Majority of the surveyed area 20372 ha (63.5%) is by moderate erosion while 10853 ha (33.8%) area is under severe erosion.

d. An area of 7665 ha (23.9%) in the surveyed area is under land capability class Ies-1 while an area of 7578 ha (23.7%) and 6507 ha (20.2%) falls under land capability class IVes-2 and IIIes-1 respectively

e. 871 ha (2.7%) area is under Miscellaneous land

f. 529 ha land spread over inAj5a and Aj5c subwatersheds leave problem of stoniness and rockiness.