

Report on Soil Resource Mapping of District Solan, Himachal Pradesh

Abstract

1. **Surveyed area** : Solan district, Himachal Pradesh
2. **Total area** : 1,92,774 ha
3. **Geographical Extent** : 30°05' to 31°15' North latitude
76°42' and 77°20' East longitude
4. **Kind of Survey** : Soil Resource Mapping using Remote Sensing Technique
5. **Soil Series/Association mapped and their extent:**

Sl. No.	Mapping Symbol	Mapping Unit	Series Association	Area (ha)	Area (%)
1	1	ALg3a1	Gulabpura-Kothi	13013	6.75
2	2	ALg3a2	Gulabpura-Kothi	169	0.09
3	3	ALg3d1	Gulabpura-Kothi	59	0.03
4	4	ALg3d2	Gulabpura-Kothi	88	0.05
5	5	ALg3c1	Gulabpura-Kothi	8	0.01
6	6	ALg3c2	Gulabpura-Kothi	234	0.12
7	7	CMf5a1	Balakhari-Bhagol-Hamirpur	887	0.46
8	8	CMf5a2	Balakhari-Bhagol-Hamirpur	454	0.24
9	9	CMf5a3	Balakhari-Bhagol-Hamirpur	195	0.10
10	10	CMf5d1	Bhagol-Patlander-Sarakar	363	0.19
11	11	CMf5d2	Bhagol-Patlander-Sarakar	361	0.19
12	12	CMf5d3	Nanowal-Bhagol-Sarakar	3121	1.62
13	15	CMf5c3	Nanowal-Bhagol-Patlander	2370	1.23
14	16	CMf7a1	Bhagol-Sarakar-Rajpura	2887	1.50
15	17	CMf7a2	Bhagol-Sarakar-Rajpura	3607	1.87
16	18	CMf7a3	Bhagol-Sarakar-Rajpura	279	0.14
17	19	CMf7d1	Bhagol-Sarakar-Rajpura	540	0.28
18	20	CMf7d2	Bhagol-Sarakar-Rajpura	5746	2.98
19	21	CMf7d3	Bhagol-Rajpura-Nanowal	1436	0.74
20	22	CMf7c1	Rajpura-Bhagol	143	0.07
21	23	CMf7c2	Rajpura-Bhagol	2138	1.11
22	24	CMf7c3	Rajpura-Bhagol	150	0.08
23	25	CMf9a1	Bhagol-Sarakar-Rajpura	420	0.22
24	26	CMf9a2	Bhagol-Sarakar-Rajpura	1074	0.56
25	28	CMf9d1	Bhagol-Sarakar-Rajpura	236	0.12

Sl. No.	Mapping Symbol	Mapping Unit	Series Association	Area (ha)	Area (%)
26	29	CMf9d2	Bhagol-Sarakar-Rajpura	1933	1.00
27	30	CMf9d3	Bhagol-Sarakar-Rajpura	705	0.37
28	31	CMf9c1	Rajpura-Bhagol	6	0.00
29	32	CMf9c2	Rajpura-Bhagol	1530	0.79
30	33	CMn9c3	Rajpura-Bhagol	222	0.12
31	34	CMx3a1	Khera-Tipra	6427	3.33
32	35	CMx3a2	Khera-Tipra	630	0.33
33	37	CMx3d1	Khera-Tipra	165	0.09
34	38	CMx3d2	Khera-Tipra	100	0.05
35	39	CMx3d3	Khera-Tipra	341	0.18
36	41	CMx3c2	Khera-Tipra	16	0.01
37	42	CMx3c3	Khera-Tipra	193	0.10
38	43	SCf5a1	Pasal-Kathog	1283	0.67
39	44	SCf5a2	Pasal-Kathog	413	0.21
40	45	SCf5a3	Pasal-Kathog	174	0.09
41	46	SCf5d1	Manjoti-Kathog	59	0.03
42	47	SCf5d2	Manjoti-Kathog	32	0.02
43	48	SCf5d3	Manjoti-Kathog	25	0.01
44	49	SCf5c1	Manjoti-Kathog-Pasal	104	0.05
45	50	SCf5c2	Manjoti-Kathog-Pasal	109	0.06
46	51	SCf7c3	Manjoti-Kathog-Pasal	24	0.01
47	52	SCf7a1	Kathog-Dusadaka-Chewa	9553	4.96
48	53	SCf7a2	Kathog-Dusadaka-Chewa	10817	5.61
49	54	SCf7a3	Kathog-Dusadaka-Chewa	1698	0.88
50	55	SCf7d1	Chewa-Dusadaka-Kathog	1084	0.56
51	56	SCf7d2	Chewa-Dusadaka-Kathog	12868	6.68
52	57	SCf7d3	Chewa-Dusadaka-Kathog	1014	0.53
53	58	SCf7c1	Chewa-Dusadaka-Kathog	692	0.36
54	59	SCf7c2	Chewa-Dusadaka-Kathog	4222	2.19
55	60	SCf7c3	Chewa-Dusadaka-Kathog	389	0.20
56	61	SCf9a1	Kathog-Chewa-Dusadaka	3666	1.90
57	62	SCf9a2	Kathog-Chewa-Dusadaka	4851	2.52
58	63	SCf9a3	Kathog-Chewa-Dusadaka	258	0.13
59	64	SCf9d1	Chewa-Dusadaka-Manjoti	676	0.35
60	65	SCf9d2	Chewa-Dusadaka-Manjoti	9196	4.77
61	66	SCf9d3	Chewa-Dusadaka-Manjoti	2631	1.36
62	67	SCf9c1	Chewa-Dusadaka-Kathog	439	0.23
63	68	SCf9c2	Chewa-Dusadaka-Kathog	11566	6.00
64	69	SDf5c3	Chewa-Dusadaka-Kathog	549	0.28
65	72	SDf5a3	Kasaru-Parnagal	87	0.05
66	73	SDf5d1	Kasaru-Parnagal	171	0.09

Sl. No.	Mapping Symbol	Mapping Unit	Series Association	Area (ha)	Area (%)
67	74	SDf5d2	Kasaru-Parnagal	15	0.01
68	79	SDf7a1	Kasaru-Tarwar	119	0.06
69	80	SDf7a2	Kasaru-Tarwar	46	0.02
70	86	SDf7c2	Maihre-Shore	39	0.02
71	87	SDf7c3	Maihre-Shore	58	0.03
72	92	SDf9d2	Chhadol-Kasaru	32	0.02
73	93	SDn9d3	Chhadol-Kasaru	229	0.12
74	95	SDf9c2	Maihre-Shore	7	0.00
75	97	SLf5a1	Kiar-Bilaspur-Devghara	3078	1.60
76	98	SLf5a2	Kiar-Bilaspur-Devghara	1417	0.74
77	99	SLf5a3	Kiar-Bilaspur-Devghara	15	0.01
78	100	SLf5d1	Silru-Bakhari-Solan	745	0.39
79	101	SLf5d2	Silru-Bakhari-Solan	1703	0.88
80	103	SLf5c1	Bakhari-Solan	15	0.01
81	104	SLf5c2	Bakhari-Solan	18	0.01
82	105	SLf9c3	Bakhari-Solan	137	0.07
83	106	SLf7a1	Bilaspur-Kiar-Devghara	5692	2.95
84	107	SLf7a2	Bilaspur-Kiar-Devghara	6935	3.60
85	108	SLf7a3	Devghara-Kiar-Bilaspur	2832	1.47
86	109	SLf7d1	Devghara-Gamrola-Jatoli	1425	0.74
87	110	SLf7d2	Devghara-Gamrola-Jatoli	9516	4.94
88	111	SLf7d3	Devghara-Gamrola-Jatoli	2356	1.22
89	112	SLf7c1	Bakhari-Chambaghat-Gamrola	285	0.15
90	113	SLf7c2	Bakhari-Chambaghat-Gamrola	4027	2.09
91	114	SLf7c3	Bakhari-Chambaghat-Gamrola	155	0.08
92	115	SLf9a1	Bilaspur-Kiar-Gamrola	921	0.48
93	116	SLf9a2	Bilaspur-Kiar-Gamrola	2721	1.41
94	117	SLf9a3	Bilaspur-Kiar-Gamrola	276	0.14
95	118	SLf9d1	Devghara-Gamrola-Jatoli	237	0.12
96	119	SLf9d2	Devghara-Gamrola-Jatoli	5051	2.62
97	120	SLf9d3	Devghara-Gamrola-Jatoli	1561	0.81
98	121	SLf9c1	Bakhari-Chambaghat-Gamrola	997	0.52
99	122	SLf9c2	Bakhari-Chambaghat-Gamrola	2938	1.52
100	123	SLf9c3	Bakhari-Chambaghat-Gamrola	242	0.13
101	9898	Habitation		2526	1.31
102	9999	Waterbodies		3512	1.82
TOTAL				1,92,774	100.00

6. Spatial Extent of Landscape/Physiographic Classes

Landscape	Physiography	Area (ha)	Area (%)
Alluvium (AL)	Stream banks (g)	13571	7.04

Conglomerate (CM)	Piedmont planes (x)	7872	4.08
Conglomerate (CM)	Undifferentiated mountain side slope (f)	30803	15.98
Sandstone (SD)	Undifferentiated mountain side slope (f)	803	0.42
Schist (SC)	Undifferentiated mountain side slope (f)	78392	40.67
Slate (SL)	Undifferentiated mountain side slope (f)	55295	28.68
Miscellaneous		6038	3.13
TOTAL		1,92,774	100.00

7. Spatial Extent of Slope Classes

Slope classes and code	Slope Range	Area(ha)	Area(%)
Very gently sloping to gently sloping (3)	1-5%	21443	11.12
Moderately sloping to strongly sloping (5)	5-15%	17238	8.94
Moderately steep to steep sloping (7)	15-33%	92885	48.18
Very steep to extremely steep (9)	33-50% and above	55170	28.62
Miscellaneous		6038	3.13
TOTAL		1,92,774	100.00

8. Spatial Extent of Major Land Use/ Land Cover

Major Land Use	Area (ha)	Area (%)
Agriculture (a)	86894	45.08
Forest (c)	34022	17.65
Open scrub (d)	65820	34.14
Miscellaneous	6038	3.13
TOTAL		1,92,774

9. Spatial Extent of Soil Erosion Classes

Erosion	Area (ha)	Area (%)
Slight to moderate erosion (e1-e2)	53866	27.94
Moderate to severe erosion (e2-e3)	104200	54.05
Severe to very severe erosion (e3-e4)	28670	14.87
Miscellaneous	6038	3.13
TOTAL		1,92,774

10. Spatial Extent of Land Capability Classes

Land Capability Classes (LCC)	Area (ha)	Area (%)
Land Cabalbility Class - II	13182	6.84
Land Cabalbility Class - II-III	7057	3.66
Land Cabalbility Class - III-IV	7532	3.91
Land Cabalbility Class - IV	59123	30.67
Land Cabalbility Class - VI	753	0.39
Land Cabalbility Class - VII	65067	33.75
Forest	34022	17.65
Miscellaneous	6038	3.13
TOTAL		1,92,774

11. Soils of the area have been classified under three Orders i.e. Alfisols, Entisols and Inceptisols and all the thirty two Soil Series identified in the area have been

further classified into four Suborders; five Great Groups; six Subgroups and fourteen Families.