Abstract

1. **Surveyed Area** : Tehri Garhwal district, Uttarakhand

2. **Total Area** : 390257 ha

3. **Geographical Extent** : 30º 3' to 30º 53' North latitude

   77º56' to 79º 04' East longitude

4. **Kind of Survey** : Soil Resource Mapping using Remote Sensing & GIS Techniques

5. **Period of Survey** : 2009

6. **Agro-climatic Region** : 1 (Western Himalayan Region)

❖ **Soil Series/ Association Mapped and their Extent**

Mapping Symbol	Mapping Unit	Series Association			Area (ha)	Area (%)
1	ACj2a1	Gauchar	Molnau	Nagni	3015	0.77
2	CGf5a1	Kirgani	Arakot	Karn_Karayat	4095	1.05
3	CGf5c2	Sat_Tal	Kirgani	-	665	0.17
4	CGf5d1	Mason	Chamsali	-	142	0.04
5	CGf7a1	Gwalkot	Jasauli	Khan	71035	18.20
6	CGf7a2	Jasauli	Pipariyana	Ghatia	4901	1.26
7	CGf7a3	Tiloth	Kalyani	Ponkhal	7027	1.80
8	CGf7a4	Kalyani	Syanchatti	Kandargaon	665	0.17
9	CGf7c1	Jageshwar	Chaurangikhal	Sat_Tal	6188	1.59
10	CGf7c2	Irthram	Dharamgarh	Charma	26323	6.75
11	CGf7c3	Pothibasa	Kandia	Kanthargaon	180	0.05
12	CGf7d1	Dungar	Pirsal	Maniger	27580	7.07
13	CGf7d2	Kharsali	Nagtor	Supri	150	0.04
14	CGf9a1	Chamsali	Rampur		599	0.15
15	CGf9a2	Maneri	Jakhari	Tiloth	56	0.01
16	CGf9a3	Phulibagad	Barkot	-	197	0.05
17	CGf9c1	Lidha	Balwakhan	Sauna	98480	25.23
18	CGf9c2	Kondu	Dharamgarh	Charma	42126	10.79
19	CGf9c3	Pothibasa	Kandia	Syalni	16441	4.21

Mapping Symbol	Mapping Unit	Series Association			Area (ha)	Area (%)
20	CGf9c5	Silkyara	Rampur-1	Syalni	5765	1.48
21	CGf9c6	Bhainsari	Badethi	Gumla	3558	0.91
22	CGf9c7	Majikdanda	Rampur-1	-	23504	6.02
23	CGf9c8	Rampur-1	Badethi	-	3042	0.78
24	CGf9d1	Pirsal	Maniger	Pipola	5743	1.47
25	CGf9d2	Kharsali	Nagtor	Supri	635	0.16
26	CGf9d3	Banic	Kharsali	-	9761	2.50
27	Habitation				239	0.06
28	Waterbodies				4019	1.03
29	Snow Cover				24126	6.18
TOTAL					**390257**	**100**

❖ **Spatial Extent of Landscape/ Physiography Class**

Landscape	Physiography	Area (ha)	Area (%)
Alluvium (AL)	River terraces (j)	3015	0.77
Complex Geology (CG)	Undifferentiated mountain side slope (f)	358858	91.95
Habitation		239	0.06
Waterbodies		4019	1.03
Snow cover		24126	6.18
TOTAL		**390257**	**100**

❖ **Spatial Extent of Slope Class**

Slope classes and code	Slope Range	Area (ha)	Area (%)
Nearly level to very gently sloping (2)	0-3 %	3015	0.77
Moderately to Strongly sloping (5)	5-15 %	4902	1.26
Moderately steep to steep sloping (7)	15-33 %	144049	36.93
Very steep to extremely steep sloping (9)	33-50 % and above	209907	53.76
Habitation		239	0.06
Waterbodies		4019	1.03
Snow cover		24126	6.18
TOTAL		**390257**	**100**

❖ **Spatial Extent of Major Land Use/ Land Cover**

Major Land Use	Area (ha)	Area (%)
Agriculture (a)	91590	23.46
Forest (c)	226272	57.98
Open scrub (d)	44011	11.28
Habitation	239	0.06
Waterbodies	4019	1.03
Snow cover	24126	6.18
TOTAL	**390257**	**100**

❖ **Spatial Extent of Land Capability Class**

Land Capability Classes (LCC)	Area (ha)	Area (%)
Land Capability Class – II-III	3015	0.77
Land Capability Class – III-IV	4095	1.05
Land Capability Class – IV	84424	21.63
Land Capability Class – VI	142	0.04
Land Capability Class – VII-VIII	43869	11.24
Forest	226272	57.98
Habitation	239	0.06
Waterbodies	4019	1.03
Snow cover	24126	6.18
TOTAL	**390257**	**100**

Salient Features

1. The surveyed area fall under two major landscapes viz. Alluvium-Colluviums comprising river terraces landform and Complex Geology comprising undifferentiated mountain side landform.

2. Maximum part of surveyed area mapped under Complex Geology landscape accounting to 91.95 % whereas only 0.77 % of the surveyed area mapped under Alluvium-Colluviums landscape.

3. Soils of the area have been classified under three Orders i.e. Inceptisols, Entisols and Mollisols in order of their dominance. The fifty two soil series identified in the area have been further classified into 8 Suborders; 17 Great Groups; 27 Subgroups and 36 Families.

4. A study of the area reveals that majority of the surveyed area (57.98%) is under forest cover followed by land under agricultural use (23.46 %) and land under open scrub (11.28%). Together these three land use categories account for 92.72% of the total area. The habitation, water bodies and snow cover account for only 7.27 %.

5. The flora of the district may be divided into six main botanical divisions and is therefore account for maximum area of 226272 ha. Around 21.63 % of the area is under Land Capability Class IV which is

best suited for cultivation of plantation crops/ aromatic/ medicinal herbs. Around 11.28 % area is classified under Land Capability Class VI-VIII suited for agro-forestry/ pastures. Only about 0.77 % area is classified under Land Capability Class II-III which is suitable for agriculture and with moderate limitations and prone to flooding.