

ABSTRACT

- 1. Surveyed Area** : Prioritization of Microwatersheds of 2B3F, 2B3G and 2B3I Subcatchments of Ghaghra FPR Catchment, Districts-Almora , Bageshwar, Champawat, Nainital, Pithoragarh and Udham Singh Nagar, Uttarakhand; Districts- Bahraich, Barabanki, Gonda, Kheri, Pilibhit and Sitapur, Uttar Pradesh
- 2. Location** : 26°59'20" to 30°14'05" North Latitude and 79°28'20" to 81°36'02" East Longitude
- 3. Total Area Surveyed** : 1695759 ha
- 4. Kind of Survey** : Rapid Reconnaissance Survey
- 5. Period of Survey** : January, 1996 to July, 1996
- 6. Agro climatic zone** : I - Western Himalayan Region
V - Upper Gangetic Plains Region
- 7. Base Maps** : Survey of India Toposheets on 1:50,000 scale
- 8. Hydrological division** :
- | | |
|----------------|-----------------|
| 2 | Region |
| 2B | Basin |
| 2B3 | Catchment |
| 2B3F | Subcatchment |
| 2B3G | Subcatchment |
| 2B3I | Subcatchment |
| 2B3F1-7 | Watersheds |
| 2B3G1-9 | Watersheds |
| 2B3I 1-5 | Watersheds |
| 2B3F1a, b ... | Subwatersheds |
| 2B3F1a1, 2 ... | Microwatersheds |

9. Areal Extent of Different Runoff Potential Mapping Units (RPMUs)

Sl.No.	RPMU	Runoff Potential Index	Area in ha	Percentage
1	AL01	57	67974	4.01%
2	AL02	55	102564	6.05%
3	AL03	55	54384	3.21%
4	AL04	55	15373	0.91%
5	AL05	54	1416	0.08%
6	AL06	55	15942	0.94%
7	AL07	54	113117	6.67%
8	AL08	58	29472	1.74%
9	AL09	58	20564	1.21%
10	AL10	57	151731	8.95%
11	AL11	58	19386	1.14%
12	AL12	65	6001	0.35%
13	AL13	55	4243	0.25%
14	AL14	54	132363	7.81%
15	AL15	57	33956	2.00%
16	AL16	56	15794	0.93%
17	AL17	56	55921	3.30%
18	AL18	56	142244	8.39%
19	AL19	59	14224	0.84%
20	AL20	63	11671	0.69%
21	AL21	57	13420	0.79%
22	AL22	57	31627	1.87%
23	AL23	73	1013	0.06%
24	AL24	53	4284	0.25%
25	AL25	58	209	0.01%
26	AL26	58	10652	0.63%
27	CG01	61	917	0.05%
28	CG02	64	26448	1.56%
29	CG03	69	94029	5.54%
30	CG04	84	1053	0.06%
31	CG05	66	1224	0.07%
32	CG06	97	7311	0.43%
33	CG07	88	36177	2.13%
34	CG08	79	185144	10.92%
35	CG09	69	35524	2.09%
36	CG10	67	65545	3.87%
37	CG11	94	274	0.02%
38	CM01	67	3411	0.20%
39	CM02	61	3333	0.20%
40	CM03	69	1510	0.09%
41	CM04	61	111	0.01%
42	GR01	60	414	0.02%
43	GR02	58	1647	0.10%
44	GR03	68	11097	0.65%
45	GR04	64	386	0.02%
46	GR05	75	22303	1.32%
47	GR06	85	3015	0.18%
48	GR07	87	843	0.05%
49	GR08	58	861	0.05%
50	GR09	65	1812	0.11%
51	SS01	71	154	0.01%
52	SS02	76	21543	1.27%
53	SS03	90	2462	0.15%
54	HB	Habitation	1946	0.11%
55	RIVER	River	90001	5.31%
56	WB	Water body	5719	0.34%
		Grand Total	1695759	100.00

10. Soil Erosion Hazards

EROSION	TOTAL AREA	Percentage	U.K.						U.P.					
			Almora	Bageshwar	Champawat	Nainital	Pithoragarh	Udham Singh Nagar	Bahraich	Barabanki	Gonda	Kheri	Pilibhit	Sitapur
None to slight water erosion	780427	46.02	724	13946	11269	104	8233	8353	126340	54682	1860	382906	28572	143438
Slight to moderate water erosion	209207	12.34	150	4855	29141	214	2008	176	20429	10596	152	57114	17446	66926
Moderate water erosion	351985	20.76	24511	54836	76497	3020	78421	3271	48957	1605	-	43681	6255	10931
Moderate to severe water erosion	207341	12.23	22886	84571	31863	8404	41945	-	497	3926	-	7288	-	5961
Severe water erosion	47846	2.82	3355	5758	17161	-	21572	-	-	-	-	-	-	-
Very severe water erosion	1287	0.08	-	167	-	-	107	-	877	-	-	136	-	-
Misc.	97666	5.76	111	865	4596	74	1396	2362	23935	3607	218	40818	11057	8627

11. District wise distribution of Microwatersheds under different priority categories

State	District Name	Priority Category	No. of Microwatersheds	Total Area ha	Percentage	
U.K.	Almora	Very high	105	48791	94.31	
		High	10	2946	5.69	
		Medium	0	0	0.00	
		Low	0	0	0.00	
		Very low	0	0	0.00	
	Total			115	51737	100.00
	Bageshwar	Very high	265	133462	80.89	
		High	51	29078	17.62	
		Medium	5	2458	1.49	
		Low	0	0	0.00	
		Very low	0	0	0.00	
	Total			321	164998	100.00
	Champawat	Very high	204	125367	73.52	
		High	48	32275	18.93	
		Medium	4	4031	2.36	
		Low	6	5931	3.48	
		Very low	3	2923	1.71	
	Total			265	170527	100.00
	Nainital	Very high	29	11816	100.00	
		High	0	0	0.00	

		Medium	0	0	0.00
		Low	0	0	0.00
		Very low	0	0	0.00
		Total	29	11816	100.00
	Pithoragarh	Very high	290	115547	75.19
		High	77	38135	24.81
		Medium	0	0	0.00
		Low	0	0	0.00
		Very low	0	0	0.00
		Total	367	153682	100.00
	Udham Singh Nagar	Very high	1	4	0.03
		High	0	0	0.00
		Medium	0	0	0.00
		Low	3	3380	23.87
		Very low	13	10778	76.11
		Total	17	14162	100.00
U.P.	Bahraich	Very high	2	1133	0.51
		High	0	0	0.00
		Medium	0	0	0.00
		Low	150	121399	54.92
		Very low	143	98503	44.56
		Total	295	221035	100.00
	Barabanki	Very high	0	0	0.00
		High	0	0	0.00
		Medium	0	0	0.00
		Low	94	70319	94.49
		Very low	12	4097	5.51
		Total	106	74416	100.00
	Gonda	Very high	0	0	0.00
		High	0	0	0.00
		Medium	0	0	0.00
		Low	0	0	0.00
		Very low	5	2230	100.00
		Total	5	2230	100.00
	Kheri	Very high	0	0	0.00
		High	0	0	0.00
		Medium	4	3696	0.69
		Low	308	263176	49.47
		Very low	337	265071	49.83
		Total	649	531943	100.00
	Pilibhit	Very high	0	0	0.00
		High	0	0	0.00

		Medium	0	0	0.00
		Low	18	15263	24.10
		Very low	58	48067	75.90
		Total	76	63330	100.00
	Sitapur	Very high	0	0	0.00
		High	0	0	0.00
		Medium	0	0	0.00
		Low	260	210215	89.12
		Very low	42	25668	10.88
		Total	302	235883	100.00

12. Distribution of Area under Different Priority Categories

Sl.No.	Priority Category	No.of Microwatersheds	Area in ha.	Percentage
1	Very High (above 70)	769	436120	25.72
2	High (66-70)	173	102434	6.04
3	Medium (61-65)	13	10185	0.60
4	Low (56-60)	757	689683	40.67
5	Very Low (55 & below)	521	457337	26.97
	Grand Total	2233	1695759	100.00

13. Salient Features:

- ⇒ Delineation and codification is done up to microwatersheds level in order to have viable size of the treatment area having district spatial extent and unique national code.
- ⇒ Out of the total 2233 microwatersheds, 942 microwatersheds fall under very high and high category.
- ⇒ 769 microwatersheds falls under very high priority with 436120 ha (25.72%) and 173 microwatersheds with 102434 ha (6.04%) comes under high priority categories which needs immediate attention for proper soil and water conservation.
- ⇒ About 49133 ha (2.9%) is prone for severe to very severe erosion and 207341 ha (12.23%) is prone for moderate to severe erosion hazards.
- ⇒ Hill side slope occupies nearly 513031 ha (30.25 %) and 257436 ha (15.18%) is mapped as alluvial plain of the total surveyed area.
- ⇒ Very deep to deep soils covers maximum an area of 1068686 ha and fallows shallow to moderately deep 315846 ha respectively and together constitutes 81.65 % of the total surveyed area.

HOW TO USE SOIL SURVEY REPORT

The report embodies the results of Rapid Reconnaissance Survey conducted for identification and delineation of priority microwatersheds of 2B3F, 2B3G and 2B3I Subcatchments of Ghaghra FPR Catchment falling in Almora , Bageshwar, Champawat, Nainital, Pithoragarh and Udham Singh Nagar districts, Uttarakhand ; Bahraich, Barabanki, Gonda, Kheri, Pilibhit and Sitapur districts, Uttar Pradesh covering an area of 1695759 ha spread over 2233 microwatersheds. The priorities are fixed on the basis of Runoff Potential Index (RPI). Higher the values of Runoff Potential Index suggest higher priority and vice versa. The concerned maps on the scale of 1:50,000 are appended with the report. It also furnishes information on general characteristics of the area such as, location and extent, physiography, relief, drainage, geology, climate, present landuse, natural vegetation, water supply and soils of the area.

In the map, each microwatershed is marked by a symbol like 2B3F1a1 etc. where ‘2’ stands for water resource region, ‘2B’ indicates basin , ‘2B3’ for catchment, ‘2B3F’ for subcatchment, ‘2B3F1’ for watershed, ‘2B3F1a’ for subwatershed and ‘2B3F1a1’ for microwatershed. Within each microwatershed, the Runoff Potential Mapping Units (RPMUs) are demarcated according and symbolized by capital English alphabets, based on geological origin of the land ‘AL’ stands for Alluvium, ‘GR’ stands for Granite etc. and their further subdivisions are made on the basis of land and soil characteristics. Each unit connotes a set of physiography, slope, landuse, soil characteristics such as soil depth, colour, texture, severity of erosion and management practices. Mapping units are assigned with respective runoff potential weightage value of different microwatersheds have been categorized as very high, high, medium, low and very low priority areas according to runoff potential index value.

The mapping legends furnished in the Table-5 and differentiating characteristics of each mapping units represented in Table-6.

The details of computation made for determining districtwise runoff potential index of various microwatersheds are furnished in Annexure-I and the information of relative priority of microwatersheds in descending order of grading are furnished in Annexure-II.

Microwatersheds categorized under very high and high priority are selected for treatment of degraded lands of these microwatersheds under FPR scheme. Both treatable and non-treatable lands are occupied by each priority (very high and high category) microwatersheds. The ratio of treatable and non-treatable lands in a priority microwatershed varies with the kind, degree and extent of the degraded lands occupied by the some microwatersheds.

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