

1 **Supplement: land unit types and site characteristics for the soil profiles considered**

2 Vegetation codes 1: alpine grassland; 1a: alpine grassland invaded by larch; 2: coniferous forest; 3: alpine meadow with shrubs (*Juniperus communis*, *Salix* spp); 4: mixed
3 broadleaved pioneer wood; 5:coppice; 5a: abandoned coppice with pioneer species invasion; 6: Mixed forest with conifers and broadleaves; 7: coniferous forest; 8: pasture; 9:
4 meadow

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Profile ID	Northing (UTM)	Easting (UTM)	Land unit ID	Altitude (m asl)	Slope (%)	Vegetation cover	Synthetic land unit description	Soil taxonomy			Morphology and lithology
1	5076828	386422	33224	2184	23	1	Areas with limited slope, with morainic substrate, mixed lithology, herbaceous cover	Typic	Udorthent	sandy, mixed, frigid	Mixed glacial deposits, lateral morain
2	5076093	385123	51223	2040	38	2	Areas with intermediate slope, interested by large quiescent landslides; mixed morainic substratum, prevalence of coniferous cover	Typic	Cryorthent	sandy, mixed	Mixed glacial deposits, lateral morain
3	5074264	385429	53112	1723	20	1	Areas with limited slope, with colluvial deposits and unstable incoherent deposits, morainic substrate with mixed lithology	Typic	Udorthent	loamy, mixed, mesic	Morainic deposits on serpentinites
4	5075243	384917	51212	1959	25	2	Areas with limited slope, with prevailing coniferous cover, morainic substrate with mixed lithology and rock outcrops	Typic	Cryopsamments,	mixed	Mixed colluvial deposits, with serpentinites

5	5075724	385815	53222	1923	20	1	Slopes with incoherent detritic deposits, with prevailing herbaceous cover; morainic substrate with mixed lithology	Typic Dystrudept mixed, frigid	sandy,	Mixed morainic deposits, with serpentinites
6	5075524	383102	33224	2390	50	1	Areas with limited slope, with morainic substrate, mixed lithology, herbaceous cover	Typic Cryorthent mixed	sandy,	Mixed deposits
7	5075064	383435	51212	2235	15	3	Areas with limited slope, with prevailing coniferous cover, morainic substrate with mixed lithology and rock outcrops	Typic Cryopsamment, mixed		Moraine
8	5071662	386287	51112	1838	10	2	Areas with limited slope, with morainic substrate, mixed lithology, coniferous vegetation	Typic Cryorthent mixed	sandy,	Mixed orainic deposits with serpentinites
9	5070270	382310	51123	1560	15	2	Areas with intermediate slope, with alluvial fans and colluvium, morainic substrate with mixed lithology, prevailing coniferous cover	Typic Udipsamment, mixed (calcareous), mesic		Mixed deposits with serpentinites
10	5068954	382853	51112	1260	40	2	Areas with limited slope, with morainic substrate, mixed lithology, coniferous vegetation	Typic Ustipsamment, mixed (calcareous), mesic		Morainic deposits on calcschist
11	5072228	384870	31234	2220	65	2	Areas with considerable slopes, with mixed lithology, often with landslides, with prevailing coniferous cover	Typic Cryopsamment, mixed (calcareous)		Gravitative deposits on calcschist
12	5070390	386307	52112	1435	25	1	Areas with limited slope, developing on moraine with mixed lithology, prevalence of broadleaves cover	Typic Udorthent mixed (calcareous), mesic	sandy,	Glacial deposits with prevalence of gravel
13	5071763	382632	31124	1350	65	4	Areas with considerable slopes, with mixed lithology,	Typic Udorthent	sandy,	Gravitative deposits on

							often with landslides, with prevailing coniferous cover	mixed, mesic	calcschist
14	5076801	383642	63224	2358	65	1	Areas with considerable slopes, with detritic fans and abundant rock outcrops; mixed lithology; prevailing herbaceous cover	Typic Cryopsamment, mixed	Glacial deposits
15	5077188	385710	53214	2300	60	1	Slopes with alluvial fans and detritic deposits, and rock outcrops; herbaceous cover; morainic substrate with mixed lithology	Typic Cryopsamment, mixed	Mixed morainic deposits
16	5069342	382515	32124	1450	65	5	High slopes on alluvial fans or detritus, with sporadic presence of active landslides, mixed lithology, prevailing broadleaves cover	Typic Udipsamment, mixed (calcareous), mesic	Gravitational deposits, calcschists
17	5067584	385073	53112	670	25	4	Areas with limited slope, with colluvial deposits and unstable incoherent deposits, morainic substrate with mixed lithology	Typic Xeropsamment, mixed (calcareous), mesic	Morainic deposits, calcareous
18	5065478	377795	55034	884	16	4	Slopes interested by incipient or quiescent mass movements, active taluses, presence of mud flows, debris flow and fractured rock outcrops, diffused landslides. Prevalence of mixed coniferous and broadleaves forest.	Typic Xeropsamments, mixed, mesic	Mixed deposits with micaschists
19	5065947	377216	32032	708	45	4	Alluvial fans affected by the year 2000 flood, presence of quarries; presence of areas affected by debris flows and ex-agricultural terraced slopes; Heterogeneous	Typic Xeropsamment, mixed, mesic	Mixed colluvium

vegetation cover, with prevalence of deciduous species

20	5065717	380920	35033	925	43	4	Slope sectors with abundance of boulders and fractured outcrops; area affected by both quiescent and active mass movements the latter on clear cut corridors); taluses with bare soil; frequent debris flow episodes and flooding; mixed forest cover	Typic mixed, mesic	Xerorthent sandy,	Colluvium, schists	prevalence of
21	5065494	380228	35033	687	37	4	Slope sectors with abundance of boulders and fractured outcrops; area affected by both quiescent and active mass movements the latter on clear cut corridors); taluses with bare soil; frequent debris flow episodes and flooding; mixed forest cover	Typic mixed, mesic	Xeropsamment,	Colluvium, schists	prevalence of
22	5064683	382394	35033	981	47	6	Slope sectors with abundance of boulders and fractured outcrops; area affected by both quiescent and active mass movements the latter on clear cut corridors); taluses with bare soil; frequent debris flow episodes and flooding; mixed forest cover	Typic mixed, mesic	Xeropsamment,	Gravitative deposits	
23	5065870	381801	55032	828	22	6	Areas with limited slope; presence of active alluvial fans, subject to debris flow phenomena. Prevalence of mixed forest (broadleaves and conifers)	Typic mixed, mesic	Xeropsamment,	Morainic deposits, prevalence of prasinites and schists	
24	5066400	383807	34031	623	21	5a	Alluvial plain affected by the year 2000 flood	Typic mixed, mesic	Xeropsamment,	Mixed gravitative deposits, prevalence of calcschists	

25	5063873	383763	55023	990	30	6	Sectors with high slope, with active alluvial fans or taluses; presence of debris flow phenomena; prevalence of mixed forest	Typic	Xeropsamment,	Mixed morainic deposits
26	5065230	384353	55034	959	50	2	Slopes affected by incipient or quiescent mass movements, active taluses, presence of mud flows, debris flow and fractured rock outcrops, diffused landslides. Prevalence of mixed coniferous and broadleaves forest.	Typic	Xeropsamment,	Morainic deposits, prevalence of calcschists
27	5066174	387705	55032	630	32	6	Slopes affected by active mass movements, active taluses, presence of mud flows, debris flow and fractured rock outcrops, diffused landslides. Prevalence of mixed coniferous and broadleaves forest.	Typic	Xeropsamment,	Mixed morainic deposits
28	5065809	390277	55034	650	50	5	Slopes affected by incipient or quiescent mass movements, active taluses, presence of mud flows, debris flow and fractured rock outcrops, diffused landslides. Prevalence of mixed coniferous and broadleaves forest.	Typic	Haploxerept sandy,	Morainic deposits, prevalence of calcschists
29	5066248	390277	25034	930	40	7	Slope sectors partially affected by fans and colluviums; active landslides and clear-cut areas; mixed forest, where present	Typic	Haploxerept sandy,	Colluvium, prevalence of calcschists
30	5066138	389387	55034	880	40	6	Slopes affected by incipient or quiescent mass movements, active taluses, presence of mud flows,	Typic	Xerorthent sandy,	Mixed morainic deposits, abundance of ophiolites

debris flow and fractured rock outcrops, diffused landslides. Prevalence of mixed coniferous and broadleaves forest.

31	5065855	387630	25034	950	55	6	Slope sectors partially affected by fans and colluviums; active landslides and clear-cut areas; mixed forest, where present	Typic Haploxerept coarse-loamy, mixed, mesic	Mixed morainic deposits
32	5066124	5066124	14031	520	4	2	Flat areas periodically subject to flooding; high settling density; presence of quarry deposits	Typic Xerorthent coarse-loamy, mixed, mesic	Mixed alluvial deposits
33	5066726	382644	33031	500	1	8	Alluvial fans with material deriving from the year 200 flood; areas with debris flow deposits; sub-flat portions of mixed discontinuous forest	Typic Xeropsamment, mixed, mesic	Alluvial deposits, prevalence of calcshists
34	5065703	378928	14032	550	2	9	Alluvial fans with agricultural land use	Typic Haploxerept sandy, mixed, mesic	Colluviums, mixed deposits
35	5066473	390524	34032	500	15	9	Sub-flat areas subject to flooding or gentle slopes with dominant agricultural use	Typic Haploxerept sandy, mixed, mesic	Colluviums, mixed deposits with prevalence of ophiolites
36	5085315	383922	33214	2154	50	8	Vaste portions of the upper part of slopes on the right valley side, with South exposition, mixed detritus cover and herbaceous vegetation	Typic Cryorthent, skeletal, mixed	Mixed gravitative deposits
37	5082991	380453	53224	2018	40	1a	Slopes on the right valley side, with considerable slopes, with mixed glacial deposits and high presence of surface skeleton, with herbaceous cover	Typic Cryorthent, skeletal, mixed	Mixed morainic deposits

38	5086103	386055	46234	1914	25	1a	Areas with limited slopes, on acid rock substrate, with conifer vegetation interrupted by avalanche corridors	Typic	Cryorthent	sandy-	Gneiss and micaschists
									skeletal, mixed		
39	5086376	385738	43234	1998	15	1	Pastures with medium to high slope, South-facing, with mixed detritic substrate and presence of rock outcrops.	Typic	Cryorthent	sandy,	Mixed morainic deposits
									mixed, non acid		
40	5081192	378163	41134	1495	50	7	North-facing sloping areas, with gneiss and micaschist substrate, coniferous cover	Typic	Udorthent,	sandy-	Micaschist and gneiss
									skeletal, mixed, mesic		
41	5076284	371645	34122	1005	35	4	Footslopes with colluvial material, medium slope, agricultural with high anthropogenic influence	Typic	Udorthent,	sandy,	Mixed morainic deposits
									mixed, non acid,		
