The distribution and (future) use of Switzerland's organic soils: Supplement

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CONTENTS AND NOTES

Canton abbreviations are as follows: **AG**, Aargau; **AI**, Appenzell Innerrhoden; **AR**, Appenzell Ausserrhoden; **BE**, Bern; **BL**, Basel-country; **BS**, Basel-city; **FR**, Fribourg; **GE**, Geneva; **GL**, Glarus; **GR**, Grisons; **JU**, Jura; **LU**, Lucerne; **NE**, Neuchâtel; **NW**, Nidwalden; **OW**, Obwalden; **SG**, St. Gallen; **SH**, Schaffhausen; **SO**, Solothurn; **SZ**, Schwyz; **TG**, Thurgau; **TI**, Tessin; **UR**, Uri; **VD**, Vaud; **VS**, Valais; **ZG**, Zug; **ZH**, Zurich.

Ambiguity scores (see METHODS - Organic soil area - *Harmonising data sets* in main text): [A] = unambiguously with higher certainty; [B] = unambiguously with lower certainty; [C] = ambiguously.

NEW DATA SETS: Newly downloaded data sets (unless stated otherwise) are listed in Tables S1 to S3.

Table S1: Soil maps

Table S2: Geological maps

Table S3: Forest habitat maps

The three forest habitat types used in this study were ground-truthed by taking three 1 m deep soil cores from 18 sites, across the country, chosen to represent the variety of elevations and range of the habitat types. All probes from 17 sites met the requirements of an organic soil (IPCC 2006); at the 18th site, a peat layer thick enough to be considered organic soil could only be found at the centre of the very small site. Based on these results, the forest habitat types were considered to be reliable indicators of organic soil. The ground-truthing is described in more detail in Wüst-Galley *et al.* (2015) and Wüst-Galley *et al.* (2016).

ADDITIONAL DATA SETS: These are further data sets that were taken directly from Wüst-Galley *et al.* (2015); i.e., they were not updated.

Table S4: Regional and local vegetation maps, inventories and geological maps

Fen inventories of national and regional importance (Broggi 1990)

Not all fens, as defined in Switzerland, grow on peat. Two vegetation types from the national and regional fen inventories were considered organic soil, namely transitional bogs [A] and Caricion fuscae [B]. The latter vegetation type was ground-truthed by measuring C content from 4–6 soil cores (1 m deep) at 11 sites chosen to represent the variety of landscapes in which this fen type occurs. At eight of these sites, more than half the cores contained organic soil, according to IPCC (2006). The ground-truthing of Caricion fuscae vegetation type is described in more detail in Wüst-Galley *et al.* (2015). Surfaces comprising ≥ 80 % of these vegetation types were considered organic soil. Three other vegetation types (Caricion davallianae, Magnocaricion, Phragmition) were scored as potentially containing organic soil [C]. In total, these surfaces [A and B] represent ~1,200 ha of organic soil.

Regional nature conservation inventories

The nature and landscape inventory of the canton of Grisons identified core areas of raised bogs. Those surfaces not included in the national inventory were used for this work, scored as organic soil [A]. The wetland inventory of canton Zurich also identified relevant surfaces not covered by the national inventories. Fens (scored as detailed above), raised bogs [A] and *Pinus* and *Betula* damp forest [A] were included in this work. These surfaces represent 115 ha of organic soil.

Mires and Peat, Volume 32 (2025), Article 04, Supplement, 19 pp., http://www.mires-and-peat.net/, ISSN 1819-754X
International Mire Conservation Group and International Peatland Society, DOI: 10.19189/001c.130819

Local vegetation maps
Local vegetation maps were included either (i.) for regions for which few / no data sets are available; or (ii.) because they identify surfaces not captured by the national inventories. Relevant surfaces were: Caricion fuscae (fen) vegetation [B], raised bog vegetation and other vegetation specified as growing over peat [A].

Local quaternary geology maps
Surfaces of the mapping unit "predominantly loam to fine sand, often with organic remains" (cores show that these organic remains are peat) were used in this map [C].

Wetlands
The wetland symbology (representing bogs, fens, reed beds and floodplains) from the latest topographical maps were used for this map [C]. Data were available from the Federal Office of Topography Swisstopo.

Table S5: Hydrogeology
Hydrogeological maps indicate the permeability of bedrock and unconsolidated rock, as well as the presence of a peaty cover layer. Vector data were available for three map sheets. Surfaces with a cover layer of peat were assumed to be organic soil [B]; surfaces described as having an alternating sediment of gravel, sand, clay and peat were also extracted and used for this map [C]. These surfaces represent 12,361 ha of organic soil.

Table S6: Historical maps
Topographical maps indicating the presence of peat [A] or marshes [C] were used in this map, including two national maps. Surfaces from these maps represent (historically) ca. 10,000 ha of organic soil.

Table S7: Historical texts
These include an inventory of peat extraction sites, and expert descriptions of peatlands.

Peat extraction maps
Nine maps showing sites where peat was extracted by machine in 1917–1921 from Probst *et al.* (1923) were used in this study [A]. Details are given on page 83 of Wüst-Galley *et al.* (2015). These surfaces represent (historically) about 700 ha of organic soil.

OTHER SUPPORTING INFORMATION

Table S8: Spatial quality scores

Table S9: Rule-based model

Tables S10, S11: Greenhouse gas emissions

Table S12: Land use

REFERENCES

Table S1. Soil maps used in this study. '?' = information not found; * = Soil sample density corresponds to this scale, but map is a product of a digital soil map.

Canton	Map name	Publication	Survey year	Scale	Source or copyright
AG	--- (individual local maps)	Peyer (1988a, 1988b), Landratsamt Waldshut (2001)	1974–2001	1:5,000 to 1:25,000	Daten des Kantons Aargau
BE	--- (individual local maps)	None	1970–2005	1:1,000 to 1:25,000	© Amt für Landwirtschaft und Natur des Kantons Bern
BE/FR	BOKA Seeland	Nussbaum *et al.* (2023)	2015-2022	1:15,000*	BOKA-Projekt (2023), Pro Agricultura Seeland (PAC) Ins; Berner Fachhochschule - Hochschule für Agrar-, Forst- und Lebensmittelwissenschaften (BFH-HAFL) Zollikofen; Lüscher und Aeschlimann AG Ins; Geoplaning AG Murten. Licenced under CC BY-SA 4.0
BL	Bodenkarte und Auswertungskarte zu Böden	None	1988–1998	1:5,000	Geodaten des Kantons Basel-Landschaft
BS	Bodenkarte	None	1988–1998	?	Bau- und Verkehrsdepartement des Kantons Basel-Stadt
FR	--- (individual local maps)	None	1979–1994	1:5,000 to 1:25,000	Service de l'environnement, canton FR
GE	Carte pedologique des sols agricoles	None	1985–1994	1:50,000	Système d'information du territoire à Genève (SITG), extrait en date du 9 avril 2022
GL	Bodenkartierung	Lüscher (2013)	2006–2010	1:5,000	Abteilung Landwirtschaft, Kanton GL
GR	--- (individual local maps)	None	1967–2000	1:5,000 to 1:25,000	Amt für Natur und Umwelt, Kanton GR
LU	--- (individual local maps); in part a modelled prediction map.	None	1977–1996; further surveys since 2009	1:5,000 to 1:25,000	Dienststelle für Umwelt und Energie, Kanton LU
SG	Bodenkarte	None	1960–1995; further surveys since 2013	1:5,000	Amt für Umwelt, Kanton SG

Canton	Map name	Publication	Survey year	Scale	Source or copyright
SG	Bodenkartierung St. Galler Rheintal	Oechslin *et al.* (2022)	2018–2021	1:10,000*	© BoKa Rheintal (2022), Berner Fachhochschule - Hochschule für Agrar-, Forst- und Lebensmittelwissenschaften (BFH-HAFL) Zollikofen; Volkswirtschafts-departement Kanton St.Gallen, SG
SH	--- (individual local maps)	None	1958–1995	1:5,000	Landwirtschaftsamt, Kanton SH
SO	Bodenkartierung Kanton Solothurn	Hauert *et al.* (2017)	mid 1990s onwards	1:5,000	Amt für Umwelt, Kanton SO
SZ	Bodenkarte Schübelbach, Wangen, Tuggen; Bodenkarte Reichenburg; Bodenkarte Tuggen (östlicher Teil)	Conradin & Zihlmann (1992a, 1992b, 1992c)	1991	1:5,000	Published map (not updated)
TG	Bodenübersichtskarte	Presler *et al.* (2005)	data released 2018	1:50,000	Amt für Umwelt, Kanton TG
TI	Bodenbedeckunsgebene der Amtlichen Vermessung	None	?	?	Ufficio del catasto e dei riordini fondiari, TI
VD	Résultats de la surveillance par les cantons des atteintes portées aux sols	None	data released 2018	?	Géodonnées Etat de Vaud 2022
VS	Bodenkarten (erhoben im Rahmen des Rhônekorrekturprojektes)	Presler & Bagnoud (2013)	data released 2013	1:10,000	Service des eaux, sols et assinissement, Vaud; Département des transports, de l'équipement et de l'environnement, Wallis; Troisième correction du Rhone
ZG	Bodenkarte	Jozic (1988)	?	1:5,000	GIS Kanton ZG / Amt für Umwelt des Kantons ZG
ZH	Bodenkartieung der Landwirtschaftsflächen	Jäggli *et al.* (1998)	1988–1997	1:5,000	Amt für Landschaft und Natur, Kanton ZH
BE	Moosseetal, Bern	F. König & F. Rufer, in Nussbaum (1926)	1917–1920	~ 1:25,000	Published map (not updated)

Table S2. Map sheets of the GeoCover (geological) data set used in this study.

Map sheet name	Map sheet	Year published	Scale
Delemont	1	1930	1:25,000
Les Verrieres	2	1930	1:25,000
Passwang	3	1936	1:25,000
Degersheim	4	1930	1:25,000
Cossonay	5	1935	1:25,000
Lauterbrunnen	6	1933	1:25,000
Staefa	7	1934	1:25,000
Val-d_Illiez	8	1934	1:25,000
Scalettapass	9	1935	1:25,000
Passo San Jorio	11	1939	1:25,000
Chancy	12	1938	1:25,000
Grindelwald	13	1938	1:25,000
Silvretta	14	1940	1:25,000
Les Bois	15	1946	1:25,000
Frauenfeld	16	1943	1:25,000
Le Sentier	17	1941	1:25,000
Hochdorf	18	1945	1:25,000
Zernez	20	1953	1:25,000
Muensingen	21	1949	1:25,000
Burgdorf	22	1950	1:25,000
Gais	23	1949	1:25,000
Barberine	24	1951	1:25,000
Marchairuz	25	1950	1:25,000
Schwarzenburg	26	1953	1:25,000
Echallens	27	1952	1:25,000
Luzern	28	1955	1:25,000
Zermatt	29	1953	1:25,000
Monte Moro	30	1954	1:25,000
Saas	31	1954	1:25,000
Gemmi	32	1956	1:25,000
Gd. St.-Bernard	33	1958	1:25,000
Basodino	34	1957	1:25,000
St-Léonard	35	1959	1:25,000
Guggisberg	36	1961	1:25,000
Monthey	37	1960	1:25,000
Diessenhofen	38	1961	1:25,000
Tesserete	39	1962	1:25,000
St-Ursanne	40	1963	1:25,000
Lenk	41	1962	1:25,000
Orbe	42	1963	1:25,000
Randa	43	1964	1:25,000
Scuol	44	1963	1:25,000
Rorschach	45	1964	1:25,000
Coppet	46	1964	1:25,000

Map sheet name	Map sheet	Year published	Scale
Montreux	47	1965	1:25,000
Geneve	48	1965	1:25,000
Rodersdorf	49	1965	1:25,000
Wohlen	50	1966	1:25,000
Val-de-Ruz	51	1968	1:25,000
Andelfingen	52	1967	1:25,000
Linthebene	53	1969	1:25,000
Weinfelden	54	1968	1:25,000
Bonfol	55	1969	1:25,000
Andeer	56	1971	1:25,000
Hoernli	57	1970	1:25,000
Dent-de-Morcles	58	1971	1:25,000
Basel	59	1970	1:25,000
Bieler See	60	1971	1:25,000
Simplon	61	1972	1:25,000
Morges	62	1972	1:25,000
Murten	63	1972	1:25,000
Les Mosses	64	1974	1:25,000
Bischofszell	65	1973	1:25,000
Bellinzona	66	1974	1:25,000
Neuchatel	67	1974	1:25,000
Val Bedretto	68	1975	1:25,000
Lugano	69	1976	1:25,000
Sciora	70	1977	1:25,000
St-Niklaus	71	1978	1:25,000
Solothurn	72	1977	1:25,000
Piz Campo Tencia	73	1980	1:25,000
Neunkirch	74	1981	1:25,000
Eggiwil	75	1980	1:25,000
Lyss	76	1981	1:25,000
Sembrancher	77	1983	1:25,000
Saentis	78	1982	1:25,000
Langenthal	79	1984	1:25,000
Arlesheim	80	1984	1:25,000
Albulapass	81	1987	1:25,000
Loetschental	82	1985	1:25,000
Schaechental	83	1987	1:25,000
Sursee	84	1990	1:25,000
Lausanne	85	1988	1:25,000
Wil	86	1988	1:25,000
Adelboden	87	1993	1:25,000
Les Diablerets	88	1990	1:25,000
Zug	89	1990	1:25,000
Zuerich	90	1992	1:25,000
Orsieres	91	1992	1:25,000
Chatel-St-Denis	92	1993	1:25,000

Map sheet name	Map sheet	Year published	Scale
Brig	93	1993	1:25,000
Yverdon-les-Bains	94	1994	1:25,000
Ste-Croix	95	1994	1:25,000
Moutier	96	1996	1:25,000
Beggingen	97	1998	1:25,000
Fribourg	98	1996	1:25,000
Romont	99	1995	1:25,000
Bern	100	2000	1:25,000
Chanrion	101	1998	1:25,000
Zurzach	102	2000	1:25,000
Moudon	103	2000	1:25,000
Worb	104	1999	1:25,000
Rossens	105	2002	1:25,000
Walensee	106	2003	1:25,000
Matterhorn	107	2003	1:25,000
St-Margrethen-Diepoldsau	108	2003	1:25,000
Bueren a. Aare	109	2004	1:25,000
Frick-Laufenburg	110	2005	1:25,000
Sierre	111	2009	1:25,000
Steckborn	112	2009	1:25,000
Murgenthal	113	2004	1:25,000
Grandson	114	2006	1:25,000
Gruyeres	115	2004	1:25,000
Rigi	116	2005	1:25,000
Nyon	117	2005	1:25,000
St. Moritz	118	2005	1:25,000
Piz Bernina	119	2005	1:25,000
Baden	120	2006	1:25,000
Vals	121	2007	1:25,000
Vissoie	122	2009	1:25,000
Payerne	123	2006	1:25,000
Bivio	124	2007	1:25,000
Romanshorn	125	2007	1:25,000
Oberalppass	126	2008	1:25,000
Muotathal	127	2013	1:25,000
Uster	128	2007	1:25,000
Einsiedeln	129	2009	1:25,000
Sion	130	2011	1:25,000
Aletschgletscher	131	2011	1:25,000
Ilanz	132	2010	1:25,000
Urseren	133	2012	1:25,000
Albis	134	2009	1:25,000
Aarau	135	2011	1:25,000
Greina	136	2013	1:25,000
Alpnach	137	2013	1:25,000
Ambri-Piotta	138	2014	1:25,000

Map sheet name	Map sheet	Year published	Scale
Balsthal	139	2016	1:25,000
Winterthur	140	2011	1:25,000
Nesslau	141	2011	1:25,000
Ricken	142	2012	1:25,000
Boltigen	143	2015	1:25,000
Château-d'Oex	144	2012	1:25,000
Bosco/Gurin	145	2015	1:25,000
Meiental	146	2016	1:25,000
Bellelay	147	2016	1:25,000
Schüpfheim	148	2016	1:25,000
Buchs	149	2016	1:25,000
Schöftland	150	2012	1:25,000
Bülach	151	2017	1:25,000
Mendrisio	152	2018	1:25,000
Raron	153	2017	1:25,000
Thusis	154	2017	1:25,000
Chasseral	155	2017	1:25,000
Davos	156	2017	1:25,000
Sargans	157	2018	1:25,000
Hauenstein	158	2018	1:25,000
Locarno	159	2019	1:25,000
Amsteg	160	2018	1:25,000
Sissach	161	2020	1:25,000
Travers	162	2013	1:25,000
Sumiswald	163–165	2019	1:25,000
Langau_i.E.	163–165	2019	1:25,000
Wolhusen	163–165	2019	1:25,000
Linthal	166	2019	1:25,000
Innertkirchen	167	2020	1:25,000
Hitzkirch	168	2020	1:25,000
Eglisau	1051	1984	1:100,000
Damvant	1084	1985	1:50,000
Le Locle	1143	1910	1:25,000
Ibergeregg	1152	1967	1:50,000
Klöntal	1153	1942	1:50,000
Spitzmeilen	1154	1920–1942	1:50,000
Schesaplana-Sulzfluh	1156	1916–2004	1:10,000–1:500,000
Beckenried	1171	1909–1995	1:10,000–1:50,000
Elm	1174	1920–1942	1:50,000
Vättis	1175	1920	1:50,000
Schiers	1176	1910–2012	1:12,500–1:200,000
Serneus	1177	1926–2001	1:10,000–1:500,000
Samnau-Ischgl	1179	1952–1995	1:10,000–1:200,000
Sörenberg	1189	1910–1965	1:10,000–1:25,000
Melchtal	1190	1911–2011	1:5,000–1:100,000
Engelberg	1191	1880-2011	1:10,000–1:100,000

Map sheet name	Map sheet	Year published	Scale
Tödi	1193	1942	1:50,000
Flims	1194	1920–1942	1:50,000
Reichenau	1195	1920	1:50,000
Arosa	1196	1853–2000	1:10,000–1:200,000
Thun	1207	1905–2008	1:10,000–1:50,000
Beatenberg	1208	2010	1:25,000
Brienz	1209	1982–2012	1:10,000–1:25,000
Trun	1213	1937–1995	1:25,000
Filisur	1216	1921–1987	1:10,000–1:200,000
S-Charl	1219	1952–2004	1:10,000–1:200,000
Niesen	1227	1905–2012	1:10,000–1:50,000
Guttannen	1230	1938–2012	1:25,000
Savognin	1236	1910–2007	1:10,000–1:200,000
Piz Quattervals	1238	1927–2001	1:25,000–1:200,000
Sta Maria-Münstair	1239	1915–1991	1:10,000–1:200,000
Zweisimmen	1246	1950–1982	1:10,000–1:25,000
Mürren	1248	1905–1979	1:10,000–1:50,000
Finsteraarhorn	1249	1929–2011	1:25,000
Ulrichen	1250	1994–2012	1:10,000–1:25,000
Olivone	1253	1923–2013	1:25,000–1:100,000
Hinterrhein	1254	1918–1923	1:25,000–1:50,000
Splügenpass	1255	1926–2006	1:25,000–1:100,000
La Stretta	1258	1946	1:50,000
Binntal	1270	2003–2012	1:25,000
Biasca	1273	1923–2013	1:25,000–1:100,000
Mesocco	1274	1923–2012	1:25,000–1:100,000
Campodolcino	1275	2000	1:25,000
Val Bregaglia	1276	No information	1:25,000
La Rösa	1278	1946	1:50,000
Helsenhorn	1290	2011	1:25,000
Maggia	1292	1997–2012	1:25,000
Osogna	1293	2007	1:25,000–1:100,000
Grono	1294	2007–2012	1:25,000–1:100,000
Lago di Poschiavo	1298	1946	1:50,000
Comologno	1311	1958–2012	1:25,000–1:100,000
Rosablanche	1326	2011–2012	1:25,000
Evolène	1327	2010–2012	1:25,000
Brissago	1332	1936–2010	1:10,000–1:25,000

Table S3. Forest habitat maps used in this study. '?' = information not found.

Canton	Map name	Publication	Survey year	Scale	Source or copyright
AG	Pflanzensoziologische Kartierung	Stocker *et al.* (2002)	1996–2010	1:5000	Abteilung Wald, Kanton AG
AI	Wald-Standortskartierung	Anon (1998)	1997–1998	1:5000	Bau- und Umweltdepartement, Kanton AI
AR	Waldstandortskarte	Burnand *et al.* (2013)	2009–2012	1:5000	Amt für Raum und Wald, Kanton AR
BE	Waldnaturinventar	Burger *et al.* (1996)	1994–2012	1:5000	© Amt für Wald und Naturgefahren des Kantons Bern
BL	Standortskarte Wald	Burnand & Hasspacher (1999)	1985–1998	1:5000	Geodaten des Kantons Basel-Landschaft
BS	Standortskarte Wald	Burnand & Hasspacher (1999)	1985–1998	1:5000	Geodaten des Kantons Basel-Stadt
FR	Stations forestières	Fragnière (2020)	1993–2015	1:5000	Staat Freiburg
GE	Carte phytosociologique des forêts	None	1948–1963	1:25000	Source : Système d'information du territoire à Genève (SITG), extrait en date du 23 mars 2022
GL	Waldgesellschaften	Walcher (1984)	1985–1998	1:5000	Abteilung Wald und Naturgefahren, Kanton GL
GR	Waldstandort-Hinweiskarte	(Indicator map) Huber *et al.* (2021)	not applicable	10m ×10m	Amt für Wald und Naturgefahren, Kanton GR
GR	Waldstandorte	Zuber (2006)	1991–2004	1:2000	Amt für Wald und Naturgefahren, Kanton GR
JU	Phytosociologie stations forestières	Burnand *et al.* (1998)	1970–2021	1:5000	© Géodonnées de la République et Canton du Jura
LU	Standortstypen Wald (Pflanzensoziologische Kartierung)	von Wyl *et al.* (2003), von Wyl (2021)	1991–2001	1:5000	© 2022 rawi Kanton Luzern
NE	Carte phytosociologique	Richard (1964)	1951–1961	1:1000-1:25000	Données cartographiques du SITN © 2022

Canton	Map name	Publication	Survey year	Scale	Source or copyright
NW	Waldgesellschaften	Grunder & Baggenstos (1993)	1991–2007	1:5000	Landwirtschafts- und Umweltdirektion / Quelle: GIS Daten AG 2022
OW	Waldstandorte	None	1977–1980	1:50000	Amt für Wald und Landschaft Quelle: GIS Daten AG 2022
SG	Standortskarte	Anon (2016)	1990–2008	1:5000	Kantonsforstamt SG
SH	Waldstandortkarte	None	1967–1996	1:5000	Kantonsforstamt Kanton SH
SO	Waldstandorte	Kaufmann & von Däniken (2015)	1977–1990 and 2015	1:5000	Amt für Wald, Jagd und Fischerei, Kanton SO
SZ	Waldgesellschaften	Preiswerk (1993)	1991–1992	1:5000	Amt für Wald und Naturgefahren Kanton SZ
SZ	Pflanzensoziologische Kartierung	None	1979	1:5000	Oberallmeindkorporation Schwyz (not updated)
TG	Waldgesellschaften	Schmider *et al.* (2003)	1994–2002	1:5000	Forstamt Thurgau
UR	Waldstandorte	Frey & Bichsel (2005)	1988–2008	1:5000	Amt für Forst und Jagd, Kanton UR, source: Lisag AG
VD	Groupements forestiers	Clot & Delarze (2009)	1991–1999	100m × 00m	© DGE-Forêt-Vaud
VS	Carte de végétation forestière	Werlen (1994)	1997–1999	?	Service des forêts, de la nature et du paysage, canton du VS
ZG	Waldgesellschaften	Ziegler (2014)	1988	1:5000	Amt für Wald und Wild, Kanton ZG
ZH	Waldstandorte	Schmider *et al.* (1993)	1982–1986	1:5000	Amt für Landschaft und Natur, Kanton ZH

Table S4. Regional nature conservation inventories, local vegetation maps and geological maps used in this study.

Region	Map description or title	Author or publication	Survey year	Scale	Source or copyright
Canton Grisons	Kantonales Landschaftsinventar (Cantonal landscape inventory)	None	1980–2006	1:10,000	Amt für Natur und Umwelt, Kanton GR
Canton Zurich	Feuchtgebietskartierung – Inventar des Kantons Zürich (1976/90) (Wetland mapping, cantonal inventory)	None	1976–1990	1:5,000	Amt für Landschaft und Natur, Kanton ZH
Wauwilermoos, LU	Location of agricultural land and occurrence of peat	Früh & Schröter (1904)	1898	1:25,000	Publication
Eigenthal bei Malters, LU	Location of agricultural land, fens, raised bogs and peat-cutting surfaces		1893–1895	1:25,000	
Vallée des Ponts, NE	Location of agricultural land, occurrence of peat, raised bogs remains and peat-cutting faces		1895	1:25,000	
Altmatt, ZG and SZ	Location of agricultural land, fens, raised bogs and peat-cutting surfaces		1894	1:25,000	
Rheintal, SG	Shows location of the original fen		1990	1:100,000	
Teufimatt, OW	Shows location of forest over peat	Author anonymous, in Hahn (2011)	1880	1:5,000	Publication
Walensee and area south thereof	Vegetation map, including raised bogs	Roth (1919)	Check raster	1:50,000	Publication
Rhone area between the Dents de Morcles and lower Entremont valley, VS	Vegetation map, including fens and raised bog vegetation	Gams (1927)	Check raster	1:50,000	Publication
North western NE	Vegetation map including pasture land over peat	Spinner (1932)	1932	1:25,000	Publication
Sihltal, SZ	Vegetation map, including the current and former extent of raised bogs and fens, as well as exploited peatlands	Düggeli (1903)	1901?–1903	1:25,000	Publication
North-eastern VD	Vegetation map, including fen and raised bog vegetation	Hainard *et al.* (1992)	1981–1983	1:25,000	Publication
Upper Engadine, GR	Vegetation map, including fens and raised bog vegetation	Burga (2010)	2007–2009	1:50,000	Publication
The northern Linth valley, GL	Quanternary geological map of valley floor between Luchsingen and the lakes of Klöntal and Walen	Schindler (2004)	?	1:25,000	Publication
The Linth plain, SG, SZ	Quanternary geological map of the Linth plain				

Table S5. Maps sheets from the hydrogeological data set used in this study.

Region	Survey year	Scale	Source or copyright
Vallorbe-Léman nord	2006	1:100,000	Federal Office for the Environment FOEN; Source: Schweizerische Geotechnische Kommission SGTK (now Georessourcen Schweiz)
Biel / Bienne	1991/1992		
Saane / Sarine	1998		

Table S6. Historical topographical maps used in this study.

Region	Name	Author or publication	Publication year	Scale	Source or copyright
National map	Dufour maps	Various maps (see page 82 of Wüst-Galley *et al.* 2015) surveyed under the direction of G.H. Dufour	1815 to 1885	1:25,000 or 1:50,000 in mountainous regions	Maps digitised by the Swiss Federal Institute for Forest, Snow and Landscape Research WSL
National maps	Siegfried maps	Maps surveyed under the direction of H. Siegfried	First edition mostly 1870 to 1900; 2nd edition ca. 1910; 3rd edition ca. 1940	1:25,000	Maps digitised by Agroscope and the Swiss Federal Institute for Forest, Snow and Landscape Research WSL
The Seeland region, cantons FR, NE, BE	General Charte der Jura Gewässer / Plan Général des eaux de Jura et des inondations qu'elles produisent pendant les grandes cruës	Trechsel (1817)	1816–1817	1:50,000	Published map
Surroundings of Bern city, BE	Karte der Umgebungen von Bern	Beck (1858)	1858	1:24,742	Published map
Orbe plain, VS	Carte général de la Plaine de l'Orbe	Gonin (1862)	1862	1 :50,000	Published map
Glattal, ZH	Veränderungen von Wald-Reben-Sumpfareal	Winkler (1935-1936)	1700 and 1930 (survey years)	1 :100,000	Published map

Table S7. Other historical documents used in this study.

Region	Publication	Brief description	Survey year
Nationwide	Früh & Schröter (1904)	Descriptions of hundreds of bogs and fens across the country	1891–1903
Multiple regions, for details see page 84 in Wüst-Galley *et al.* (2015)	Lüdi (1973)	Descriptions of hundreds of bogs and fens across the country	1937–1951
Canton BE	Grossenbacher (1980)	An overview of the raised and transitional bogs of canton Bern, including sites not incorporated in the national inventories	1974–1976
South east of the city of Bern	Gerber (1925)	Peatlands in BE	?
Nationwide	Probst *et al.* (1923)	Results of two national surveys listing the size and depth of peatlands across the country	1917 and 1918

Table S8. The spatial quality scores allocated to each surface of each data set.

Category	Description
Good	If: (1) peatlands outlined or symbology detailed enough to infer outline; and (2) surveying targeted towards vegetation / soils; and (3) no apparent survey error
OK	(1) No apparent survey error; but: (2) mapping was not targeted towards vegetation / soils; and/or (3) outline of peatlands unclear, i.e., symbols on symbology far apart
Poor	(1) Apparent survey error; or (2) problems apparent in the geo-referencing of the analogue map

Table S9. The rule-based model used to classify polygons. 'M' = modern, 'H' = historical; see main text (METHODS - Organic soil area - *Harmonising data sets*) for meanings of this, and of 'A', 'B' and 'C' scores.

Class	Must contain a minimum of:	Comment
1	Two or more M 'B' info sources or One M 'B' info source & one or more H 'A' or 'B' info sources or One M 'A' info source	The more conservative estimate of organic soils
2	One M 'B' info source	Alongside class 1, forms the 'less conservative' estimate of organic soil
3	One H 'A' or 'B' info source	Historical evidence of organic soil only
4	One H or M 'C' info source	Potentially organic soil surface but no ambiguous evidence

Table S10. Greenhouse gas emission factors adopted from Switzerland's greenhouse gas inventory (FOEN 2024). Please note that FOEN (2024) uses a different nomenclature system for land use / land cover than the one used in this study.

Land use / land cover	**Assumed nutrient/ drainage status**	**Surface on organic soils (ha)**	**CO_2**	**N_2O**	**CH_4**
			(t CO_2-eq. ha^{-1} a^{-1})		
Industrial and commercial	n/a	331	0	0	0
Buildings	n/a	629	0	0	0
Transport	n/a	1048	0	0	0
Special urban areas	n/a	117	0	0	0
Recreational areas and cemeteries	Deep-drained	394	34.94	3.82	0
Orchards, vineyards and horticultural areas	Deep-drained, nutrient-rich	151	34.94	3.82	0
Arable land	Deep-drained, nutrient-rich	9499	34.94	6.05	0
Meadows, farm pastures	Deep-drained, nutrient-rich	7062	34.94	3.82	0
Alpine agricultural areas	Shallow-drained	3524	19.45	0.75	0
Non-agri. grasslands (too stony or bushy)	Shallow-drained	111	19.45	0.75	0
Forest	Unknown	5332	9.54	1.30	0
Brush forest	Unknown	60	9.54	1.30	0
Woods	Unknown	694	9.54	1.30	0
Lakes	n/a	152	0	0	0
Rivers	n/a	329	0	0	0
Unproductive vegetation	Shallow-drained	3345	19.45	0.75	0
Bare land	n/a	53	0	0	0
Glaciers, perpetual snow	n/a	0	0	0	0

Table S11. Greenhouse gas emissions from Switzerland's organic soils, according to the emission factors used by Switzerland (FOEN 2024, see Table S10) for national greenhouse gas reporting ("CH") or from IPCC (2014).

Emission factor	**Total (kt CO_2-eq a^{-1})**	**CO_2 (%)**	**N_2O (%)**	**CH_4 (%)**	**Agriculture**	**Forestry**	**Commercially unproductive vegetation**
					(kt CO_2-eq a^{-1})		
CH	828.1	88.8	11.2	0.0	740.1	2.9	70.0
IPCC lower	485.0	88.8	11.4	-0.2	449.3	1.4	98.3
IPCC mid	672.7	84.3	13.7	2.0	602.7	2.2	52.2
IPCC upper	868.5	82.1	14.7	3.2	763.7	3.0	78.7

Table S12. The management of organic soils within the agricultural surface and the importance of organic soils for the various management / crops (within the agricultural surface); int. = intensively, ext. = extensively.

1. Agricultural management / crop	2. % of each management / crop that occurs on organic soils	3. % of organic soil surface
Litter meadows	21.9	9.2
Water bodies	19.6	0.2
Vegetables	7.6	4.5
Hay meadows	5.5	0.6
Potatoes	3.9	2.0
Beets	2.9	2.3
Ext. managed meadows	2.9	12.0
Corn	2.8	8.4
Fallow	2.7	0.4
Less int. managed meadows	2.1	1.5
Berries	2.1	0.1
Sunflowers	2.0	0.6
Leys	1.9	10.9
Cereals	1.8	10.8
Legumes	1.7	0.6
Rape seed	1.5	1.8
Paddy rice	1.5	0.0
Trees	1.4	0.4
Int. managed meadows	1.3	21.8
Other crops (perennial)	1.2	0.1
Tree nurseries	1.1	0.0
Other crops (annual)	1.1	0.1
Other grasslands	0.9	0.1
Biodiversity areas	0.8	0.2
Ext. managed pastures	0.7	1.6
Int. managed pastures	0.5	2.4
Other	0.4	1.2
Forest	0.4	0.5
Summer pastures	0.3	5.5
Woodland pastures	0.3	0.1
Fruit	0.2	0.1
Vineyards	0.0	0.0
Tobacco	0.0	0.0

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