

Supplementary Material

Table S1

Reclassification of Land Cover Classes According to UN-SPIDER and USDA

ID	Description	New ID	New Description		
2	Wetland	1	Water		
61	Lake and watercourse				
62	Sea				
121	Pine forest on wetland				
122	Spruce forest on wetland				
123	Mixed coniferous forest on wetland				
124	Mixed coniferous forest on wetland				
125	Trivial deciduous forest on wetland				
126	Deciduous forest on wetland				
127	Coniferous broadleaf forest on wetland				
128	Temporary no forest on wetland				
51	Developed land, building			2	Medium residential
52	Developed land, not building or road/railway				
53	Developed land, road/railway				
111	Pine forest outside wetland	3	Forest		
112	Spruce forest outside wetland				
113	Mixed coniferous forest outside wetland				
114	Mixed coniferous forest outside wetlands				
115	Deciduous forest outside wetland				
116	Deciduous forest outside wetland				
117	Coniferous broadleaved forest outside wetland				
118	Temporary no forest outside wetland				
3	Arable land	4	Agricultural		
41	Other open land without vegetation				
42	Other open land with vegetation				

Table S2

Reclassification of Soils According to HSG

Soil type	HSG	Description
Glaciofluvial sand Glaciofluvial sediment Postglacial fine sand Postglacial sand Sandy till Shingle Silty to fine sandy till Wave-washed gravel Young fluvial sediment, sand	A	High infiltration rate and low runoff. Consists of sand, loamy sand, or sandy loam types of soils.
Glacial silt Silt	B	Moderate infiltration rate. Consists of silt loam or loam.
-	C	Slow infiltration rate. Consists of sandy clay loam.
Artificial fill Bog peat Clay till Crystalline rock Fen peat Glacial clay Gyttja clay Postglacial clay Postglacial clay, clay con- tent >25% Postglacial clay, clay con- tent 15–25% Till alternating with sorted sediments Water Young fluvial sediment, clay to silt	D	Slow infiltration rate and high runoff poten- tial. Consists of lay loam, silty clay loam, sandy clay, silty clay, or clay.

Note. Adapted from NRCS (2007) and Nilsson (2018).

Figure S1

Algorithm to automatically assign HSG's to soil types

Each “when” line checks the JG2 column in the attribute table and assigns one of the soil type identification numbers in brackets a HSG in a new column (1=A, 2=B, 3=C, 4=D). The “else ‘other’” line was used to manually check if any soil type identification number was not represented in the code.

```
case
  when "JG2" in
('10','13','28','31','33','34','36','50','55','57','76','93','95',
'229','917','8809') then '1'
    when "JG2" in ('24','48','100','2306','9010') then '2'
    when "JG2" in
('39','86','136','214','8802','8806','8950','9060') then '3'
    when "JG2" in
('1','2','5','6','9','16','17','19','22','30','40','43','51','75',
'81','85','91','92','101','116','121','200','212','215','227','3',
22','823','850','888','890','916','1950','8114','8175','8814','91',
47','9792','9794') then '4'
    else 'other'
end
```

Figure S2

Hydrologic Soil Map (a) and Land Cover Classes (b) for the Adjoining Sub-basins

