

Soil parameters measured by geophysical site investigation

Category	Parameter	Unity	Sensor	Quality	Coverage	Additional remarks
Texture						
	grain size	d50/m50, mm	gamma ray sensor	based on scientific model	global mapping	
	clay/silt content	% clay/silt	gamma ray sensor	based on scientific model	global mapping	
	organic matter	% om	gamma ray sensor	generally statistically observed	global mapping	
Structure						
	Actual total bulk density	Kg/m3	Medusa RhoC	based on scientific model	point measurements	
	presence of bed rock/ changes in lithology	cm	GPR	based on scientific model	global mapping	visible when sharp textural changes occur
	thickness of peat	cm	GPR	based on scientific model	global mapping	texture and depth dependent
	thickness of 'tilling layer'	cm	GPR	based on scientific model	global mapping	visible when sharp textural changes occur
	Indication of water holding capacity		EM38	generally statistically observed	global mapping	combination of clay + moisture content
Hydrological parameters						
	potential water holding capacity	%	gamma ray sensor	derivative of other elements	global mapping	based on (reg) pedotransfer functions
	potential bulk density	Kg/m3	gamma ray sensor	derivative of other parameters	global mapping	based on (reg) pedotransfer functions
	(internal) sealing risk		gamma ray sensor	derivative of other parameters	global mapping	based on internal sealing model
Chemistry						
	metal concentrations	mg/kg	XRF	based on scientific model	point measurements	
	trace elements	mg/kg	gamma ray sensor	in nr. of studies statistically observed	global mapping	depending on element, soil texture, method of soil treatment
	ph		gamma ray sensor	in nr. of studies statistically observed	global mapping	depending on element, soil texture, method of soil treatment
	P, K, CaCO3	mg/kg	gamma ray sensor	in nr. of studies statistically observed	global mapping	depending on element, soil texture, method of soil treatment
	Mg	mg/kg	gamma ray sensor	in nr. of studies statistically observed	global mapping	depending on element, soil texture, method of soil treatment
	N	mg/kg	gamma ray sensor	not possible	global mapping	