

About Tellus

Tellus is a national programme to gather geochemical and geophysical data across the island of Ireland, examining the chemical and physical properties of our soils, rocks and waters. The data will help to inform the management of Ireland's environment and natural resources. Tellus is undertaken by Geological Survey Ireland and is funded by the Department of the Environment, Climate and Communications.

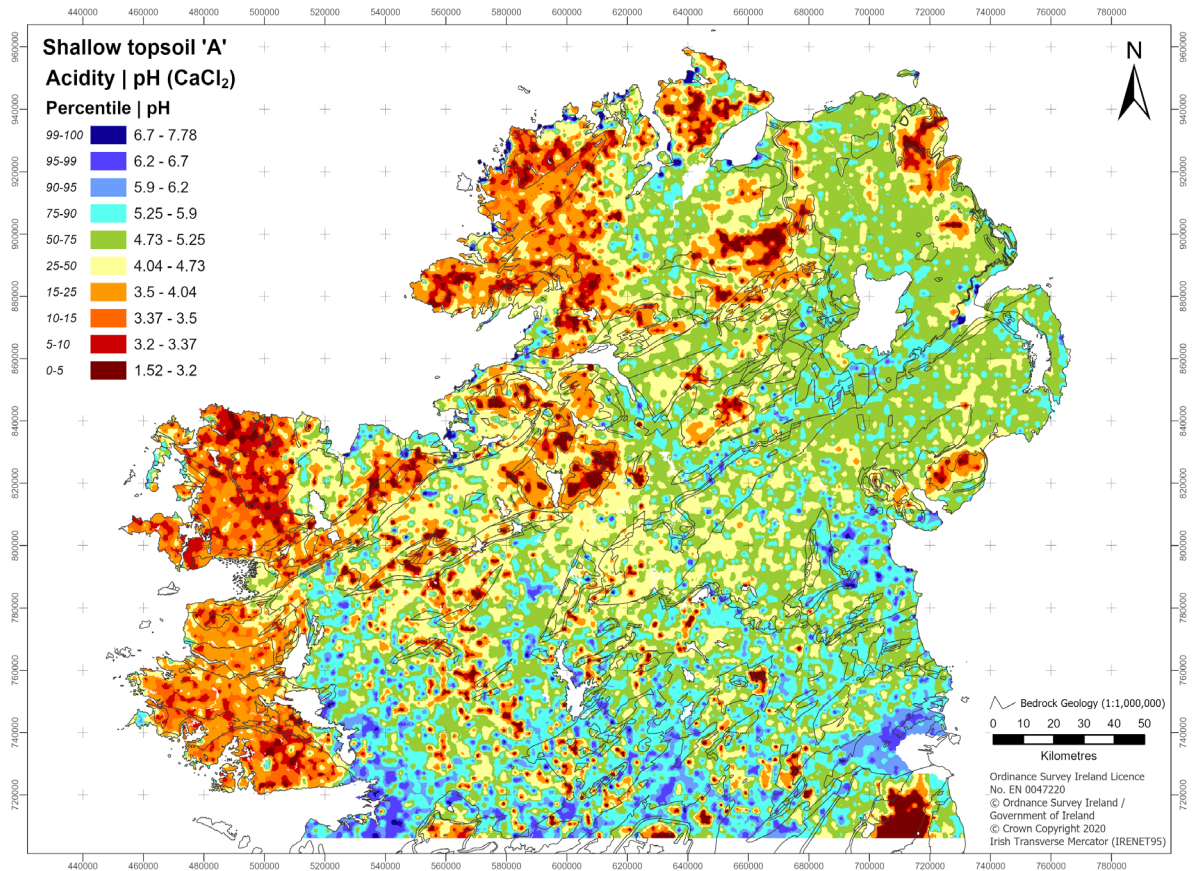
Soil pH

Shallow topsoil samples were collected from the northern half of Ireland between 2004 and 2019, as part of the Tellus geochemical survey projects of Geological Survey Ireland and the Geological Survey of Northern Ireland. The map represents almost 17,000 sites covering an area of just over 50,000 km² and incorporates a wide variety of geological domains in Ireland. Samples were collected at a typical density of one sample per 4 km² in Ireland and one sample per 2 km² in Northern Ireland.

Laboratory analyses comprised soil pH (CaCl₂), loss-on-ignition at 450°C and multi-element partial-extract analyses of major, minor and trace elements by ICP following aqua regia digestion.

Soil pH is a measure of soil acidity. It plays a major role in the solubility or mobility of elements in soil, affecting the soil's fertility and determining land use. The optimum pH of soil for tillage farming ranges from 5.8 (potatoes, oats) to 7.0 (beet, beans, peas, oilseed rape), with an optimum for grass of 6.3. Only around 11 % of soils represented on the map have a soil pH within this optimum range. The distribution of soil pH is largely determined by the presence or absence of peat or peaty soil – areas of low soil pH (< 4) on the map coincide with areas of mapped peat and peaty soil. Elsewhere, soils derived from carbonate bedrock and those that have been improved for agriculture (e.g. by liming) have a higher pH than those derived from siliciclastic rocks. On the northwest coast, *machairs*, with their abundant sea-shell content, have the highest soil pH of all.

Geochemical Data in Shallow Topsoil Soil pH



Free data & maps at www.gsi.ie/tellus

Geological Survey Ireland is a division of
the Department of the Environment, Climate and Communications



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