INDICATOR SPECIES FOR VARIATIONS IN GLASGOW SOIL

compiled by Erin Despard

This is a list of plants widely present in Glasgow, whose presence *in appreciable quantity*, *and/or in vigorous health*, can tell us something about the soil in which they grow. Photographs show their appearance *in situ*, as of late March. Descriptions contain further information to aid identification.

Plants suggestive of basic soil

Hart's tongue fern (*Asplenium scolopendrium*)

While not necessarily absent from acidic soils, this resilient fern thrives in shady locations with damp, calcareous soil (i.e., basic, calcium-rich), as well as on shady rock walls. Its fronds brown on the edges during the winter and are replaced with new ones in spring.

Common toad flax (*Linaria vulgaris*)

This is a common wildflower that is common on disturbed, basic soils. Its long-lasting yellow flowers resemble a snapdragon, but do not appear until summer.

Plants suggestive of acid soil

Rhododendron ponticum

This is a tall, evergreen shrub that was popular in woodland gardens of the late 19th and early 20th centuries, and is now considered an invasive species. It spreads by the prolific production of seeds that find hospitable ground in the damp, often acidic soil of Glasgow. However, it takes 10-20 years to begin flowering.

Heather (*Calluna vulgaris*)

An evergreen, acid-loving plant with pink or light purple flowers. It flowers late in summer, unlike the heaths or winter heathers, which are very similar in appearance but flower in late winter and early spring. Look for leaves that are scale-like.

Plants suggestive of fertile soil

Stinging nettle (*Utrica dioica*)

A nitrogen and phosphorous lover, this plant is so well-associated with enriched soils, it is used by archaeologists to locate sites of human settlement. It may also be found where there are frequent bird droppings. It has phytoextractive properties and tolerates heavy metals where most other plants cannot.

Elder (*Sambucus nigra)*

These trees or large shrubs are common in hedges, woods and waste grounds around Glasgow—in disturbed, base-rich and eutrophicated (i.e., fertilized) soil. They have a bumpy, light brown or grey bark, and the leaflets are arranged in opposite pairs in groups of five or seven. They have large, umbrella-like white flowers in summer, followed by black berries.

Common Ivy (*Hedera helix)*

This evergreen vine is a nitrophile—it thrives in shady locations with soil that is high in nitrogen. Where it is flowering or fruiting, the leaf shape is different (i.e., larger and rounder in shape).

Plants suggestive of infertile soil

Common ragwort (*Senecio jacobaea*)
A biennial plant with yellow flowers in summer, ragwort is common in poor, light soils. It looks a bit like kale, and its stems are veined with purple when small. Though it provides food to some insects, it is poisonous to some animals and causes allergic reactions in some people.

Gorse (*Ulex europaeus*)
This thorny evergreen can thrive in less fertile soil, in part because it has nitrogen-fixing bacteria in its root nodules. It has yellow flowers in early spring and looks similar to broom, which does not have thorns and blooms in the late spring and summer.

Plants suggestive of wet or poorly drained sites

Rushes (*Juncus* species)
Rushes are evergreen and often mistaken for grass. You can tell a rush by its round as opposed to flat leaves. All rushes require a very wet, even poorly-drained soil.

Lesser celandine (*Ficaria verna*)
This bulbous groundcover produces yellow flowers in early spring and then disappears entirely during the summer. It has glossy, heart-shaped leaves and grows in moist woodlands and on riverbanks.

Plants suggestive of compacted soil

Pineapple weed (*Matricaria discoidea*)
This low-growing annual can survive in poor, compacted soil, and is often found between cracks in the pavement or on pathways. It has yellow cone-shaped flowers in spring and early summer.

SOURCES CONSULTED (though any errors are of course my own)

Dickson, J.H. and others (2000). *The Changing Flora of Glasgow.* Edinburgh University Press.

Smith, Paul (2013). *Indicator Plants: Using Plants to Evaluate the Environment/s.* Wildtrack Publishing Ltd.

Database provided by Plants For a Future at www.pfaf.org

And a very informative conversation with Dr. James Dickson, archaeobotanist.