



Horsetails are distinguished from other plants with whorled branches or leaves by the stem structure: jointed, with a tubular sheath above each joint, which the upper stem section fits into. The upper edge of the sheaths have teeth which vary in size, colour and number. The spores are produced within conical or cylindrical structures, which grow singly at the top of some of the stems, the cones (as in pine-cones).

The five currently-recorded local species are not difficult to identify, and each has a distinctive 'jizz'. Each has a few diagnostic characters, which are shown in *italics* in the introductory descriptions. If in doubt, the key should allow specimens to be identified.

Two species, Great Horsetail and Field Horsetail, produce separate fertile creamy-white or fawn-brown stems which bear the large brown cones. These appear early in the season, usually in April, are very conspicuous, but wither within 1-2 weeks. They can be distinguished by size. These species then produce branch-bearing, green, sterile stems looking more like the other species. The others produce their cones at the top of green stems, and these persist much longer.

- **Field Horsetail *Equisetum arvense*** is very common, occurs in a very wide range of habitats, and can be a persistent garden and arable 'weed'. It can safely be identified from the *four blade-like ridges on its branches*; it is the most 'untidy' local species, often with creeping or reclining stems with uneven drooping branches.
- **Water Horsetail *Equisetum fluviatile*** is fairly common, often forming large stands in shallow standing water throughout the three counties; it is often unbranched, and no other species has such a *large hollow in the stem, so it is easily squashed with little pressure*.
- **Marsh Horsetail *Equisetum palustre*** is fairly common in wet places, sometimes in standing water; it looks like a more upright, short-branched, 'neat and tidy' version of Field Horsetail, safely identified by the *teeth on its sheaths, which are black in the middle, with white edges*.
- **Great Horsetail *Equisetum telmateia*** is the one species which can be identified, from its *large size and whitish stems* alone, from a considerable distance or from a moving vehicle; it is rather local, but not confined to any particular habitat.
- **Wood Horsetail *Equisetum sylvaticum*** is distinct in having its *drooping branches regularly branched*, so as to look more like a spruce tree than the other species. It is a scarce western species, found mainly in Northants oakwoods with such species as Wood-sorrel and Opposite-leaved Golden-saxifrage.

- 1 Fertile stems (a spore-cone present at apex) pale cream or fawn, and lacking branches. **2**
 Fertile stems absent, or if present, then green in part, and often with whorls of branches. **3**
- 2 Tall (1-2m), stout (stem between sheaths 9-12mm diameter), with large cones (4-8cm long).
 Stems with many (10-20) sheaths, each 15-40mm long and with 20-30 fine teeth around its upper edge. **Great Horsetail *Equisetum telmateia***
 Shorter (20-80cm), slenderer (stem between sheaths 4-6mm), with smaller cones (1-4cm long).
 Stems with fewer sheaths (4-6) which are only 3-8mm long, and have 6-12 broad teeth along their upper edge. **Field Horsetail *Equisetum arvense***
- 3 Tall (1-2m), stout (stem between sheaths 10-30mm diameter). Stems creamy-white, smooth, with whorls of green branches. Sheaths each 15-40mm long and with 20-30 fine teeth around its upper edge. **Great Horsetail *Equisetum telmateia***
 Shorter (usually 20-100cm), slenderer (stem between sheaths 1-12mm). Stems green. Sheaths 3-11mm long, and with 3-30 teeth along their upper edge. **4**
- 4 Each node with many branches, the branches themselves regularly and evenly branched, with a pair of side-branches arising at each of their joints. Stems with 10-18 grooves, but only 3-6 broad, blunt lobes on each sheath (each groove leads to a fine tooth on the sheath, but several teeth stick together to produce the blunt lobes). Cones pale, pinkish-green.
Wood Horsetail *Equisetum sylvaticum*
 Branches, if present, unbranched, or with a few uneven, long, thicker branches. Sheaths with pointed teeth, as many as there are grooves in the stem. Cones darker, greenish or blackish. **5**
- 5 Stems slender, very smooth, rather glossy dark green, snapping easily if bent. Central hollow of stem $\frac{3}{4}$ to $\frac{9}{10}$ the diameter, so stem is easily squashed between fingers with light pressure. Often with no branches, or with whorls of rather short, slender branches. Sheaths with 10-30 slender, finely-pointed black-tipped teeth. Usually growing in shallow water or in carr.
Water Horsetail *Equisetum fluviatile*
 Stems rather rough and deeply grooved, tough and solid, central hollow less than $\frac{2}{3}$ and usually less than $\frac{1}{2}$ the diameter. Usually with whorls of branches. **6**
- 6 Stems thin, flexible and held erect. Branches usually rather short, of even length, and held upward. Stem sheaths with 4-9 teeth, black in middle with pale, whitish margins. Lowest joint of each branch shorter than the adjacent stem sheath. Branches all with 3-5 vague, rounded ridges. Teeth on small sheaths at joints of branches black-tipped, rather blunt and clasping the branch surface.
Marsh Horsetail *Equisetum palustre*
 Stems often floppy or creeping. Branches often long, of varying lengths, and usually drooping. Stem sheaths with 6-18 teeth, which are entirely black. Lowest joint of each branch longer than adjacent stem sheath. Branches all with (3-)4 prominent, almost knife-edged ridges. Teeth at branch-joints green and curving away from the branch. **Field Horsetail *Equisetum arvense***