

## *Festuca altissima* All.

### Wood Fescue

*Festuca altissima* differs from most other *Festuca* species (unlike the allied genus *Schedonorus*) in being a tall broad-leaved grass. It has a scattered distribution from Bristol to northern Scotland, with concentrations in the Lake District, Tyne catchment and Glasgow area. It is evergreen and can be recorded throughout the year, flowering from mid-summer. Most sites are humid, being close to flowing water in crevices of shady rocks in gorges and denes. Previously under-recorded, its distinctive appearance is now better known, but it seems to be in rapid decline in some districts despite being considered as of 'least concern'.



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#### IDENTIFICATION

Plants are gregarious and form regular, many-leaved tussocks bearing uniform, flat, rather dark and somewhat shiny evergreen leaves up to 50 cm long which arch upwards at an angle of about 45° and only droop slightly at the apex.

The persistent sheaths are rather dark brown and lend a purplish hue to the base of the tussock. The leaves are about 10 mm wide, and so are narrower than *Luzula sylvatica*, but broader than *Deschampsia cespitosa* which are almost invariably associates. At a distance, other confusion species can include *Festuca gigantea* and *Bromus ramosus*, but they do not form many-leaved regular tussocks to the same extent, are a paler green with grooved leaves and the leaves droop



*Festuca altissima* growing in crevices of shady sandstone ledges in a wooded gorge above an upland river. Hareshaw Linn, Northumberland. December 2009. © John Richards.

more; and *Brachypodium sylvaticum* which is also paler and more drooping, and is a smaller plant.

If flowering panicles are present on *F. altissima*, they are characteristically narrow and tall, with erect branches (spreading or drooping branches in all confusion species), and it is usually possible to note that awns are absent, thus ruling out *F. gigantea*. With practice, this species can be accurately identified with binoculars at a range of up to 100 m at any time of year.

#### SIMILAR SPECIES

The other broad-leaved fescues (*Schedonorus* spp.) form clasping auricles at the top of the sheath, and have 5-nerved lemmas (often appearing 3-nerved) which are often awned. In *F. altissima* the lemmas are 3-nerved, although only the central nerve is conspicuous so that they appear 1-nerved, and lack an awn.

#### HABITATS

Nearly all sites are in old, often largely undisturbed primary woodland on rather calcareous sandstones. *F. altissima* typically inhabits horizontal joints in near vertical cliffs above rivers, under deciduous trees in partial or complete, often deep, shade. It also occurs on steep, poorly vegetated banks of brown earth.

Associated species suggest that absence from large areas of apparently suitable habitat can be explained by the low carbonate content of the sandstone, giving rise to soils of too acidic a reaction. It also grows on hard limestone and dolerite, and almost invariably occurs within 50 m of water, and is

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often found only just above flood level and not higher up the cliff.

*F. altissima* undoubtedly needs continuous levels of high humidity at all times, and the observation in Cope & Gray (2009) that it is shallow-rooted may explain its very stringent habitat requirements and vulnerability to competition, as well as dislodging. Subsidiary habitats include vegetated talus below cliffs if above flood level, and wooded limestone pavement.

To the following associated species listed in Cope & Gray (2009) - *Galium odoratum*, *Luzula sylvatica*, *Melica* spp., *Polystichum* spp., *Sanicula europaea* - can be added *Brachypodium sylvaticum*, *Bromus ramosus*, *Deschampsia cespitosa*, *Dryoperis dilatata*, *D. filix-mas* and *Festuca gigantea*. Typically, the woodland (NVC W8 *Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis*) is dominated by *Quercus* spp., but may include the cliff scrubby *Corylus avellana* and *Ulmus glabra*.

### BIOGEOGRAPHY

*F. altissima* occurs southwards to northern Spain and northern Greece, being restricted to montane areas with humid climates and reliable summer rainfall. It occurs eastwards to the Urals, but in Scandinavia the distribution is distinctly Atlantic (Hulten 1950).

Most British populations occur below 200 metres altitude. It is present in scattered localities from Bristol to Caithness, but absent from south-east England except for two localities in the



Distribution of *Festuca altissima* in Great Britain and Ireland.

Sussex Weald. There are notable concentrations of sites in the Lake District, the Tyne catchment and the Glasgow area. Populations are also present in northern Ireland, with a few sites in the south-east of Ireland.

Perring (2002) and Cope & Gray (2009) are optimistic about the present status, pointing out that Wood Fescue was seriously under-recorded for the first atlas of the British and Irish flora (Perring & Walters 1962). However, to say that the **regions in which it occurs were 'not well recorded'** is disingenuous. Rather, some botanists have since learnt which habitats it grows in and how to recognise it from a distance, information which has yet to appear in an identification guide.

Although now known from more than 100 hectads, twice as many as in Perring & Walters (1962), and considered of **'least concern'**, many populations in north-east England at least are decreasing alarmingly.

### ECOLOGY

A clump-forming, long-lived perennial with very limited powers of vegetative spread, reproducing from seed. In many sites plants either rarely flower or few inflorescences are produced. The species is wind-pollinated, and frequently fails to set seed, suggesting that it has two-locus gamaetophytic-sporophytic incompatibility as in *F. rubra*.

*F. altissima* suffers from the usual problems experienced by chasmophytes, so that establishment may depend upon seeds being caught in spiders webs, and seedlings are unusual in cliff locations. Most populations consist of mature tussocks which may be a considerable age. Consequently, attrition from competition and erosion may exceed the regenerative power of the population.

$2n = 14$  (several authors). A single report of  $2n = 42$  by Stahlin (1929) probably arose as a result of confusion with *S. arundinaceus* (*F. arundinacea*) or *S. giganteus* (*F. gigantea*).

### THREATS

Nearly all sites are restricted to difficult terrain, which has resulted in restricted forest clearance. Consequently, most habitats are not threatened. However, *F. altissima* almost invariably coexists with *Luzula sylvatica* which tends to be much more successful, aggressive and catholic in its requirements and appears to outcompete it. Warmer and wetter summers may have allowed the latter to disperse into and survive in stressful niches previously occupied by the grass. As a shallow-rooted grass restricted by competition to marginal sites, it is susceptible to cliff-falls and erosion. Many populations are small, are reducing in size and show poor regeneration.

### MANAGEMENT

None is practiced currently. Conceivably, the physical removal of *Luzula sylvatica* from alongside threatened colonies could benefit natural regeneration.

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### REFERENCES

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