

BSBI Ireland Annex I Grassland Resources

Molinia meadows **(EU Habitats Directive code 6410)**

[Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)]



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This is one of a series of reference documents that have been created as part of the Irish Grasslands Project that started in 2020. Their aim is to provide a better understanding of the four main grassland types found in Ireland that are listed on Annex I of the EU Habitats Directive. We list the main indicator species, and provide additional information on selected species, aiming to help with identification.



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreacht
Department of Housing,
Local Government and Heritage



National Parks & Wildlife Service



CEDaR
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Molinia meadow is a distinctive wet grassland community characterised by a relatively species-rich sward which is generally between 20 and 60 cm tall. The grass *Molinia caerulea* is usually prominent, however the species should not dominate. Other characteristic plant species include *Succisa pratensis* (Devil's-bit-scabious), *Cirsium dissectum* (Meadow Thistle), *Anthoxanthum odoratum* (Sweet Vernal-grass), *Filipendula ulmaria* (Meadowsweet), *Potentilla erecta* (Tormentil), *Juncus articulatus* (Jointed Rush), *Equisetum palustre* (Marsh Horsetail), *Juncus conglomeratus* (Compact Rush), *Mentha aquatica* (Water Mint), and a range of sedges including *Carex nigra* (Common Sedge), *Carex pulicaris* (Pill Sedge) and *Carex panicea* (Carnation Sedge).

The wetland moss *Calliergonella cuspidata* (Pointed Spear-moss) is often abundant. The vegetation typically develops on nutrient-poor, damp soils such as peats or gleys, which occur along the margins of lakes and rivers which experience periodic flooding during the winter months. The vegetation may also occur in areas where there is some flushing of base-enriched water such as near springs or seepage areas.

Many areas of *Molinia* meadow are grazed by livestock which helps maintain the species-richness of the vegetation. The habitat is widely distributed in Ireland however most examples are in the west and north of the island. The main threats to the habitat are generally agricultural intensification, under-grazing and afforestation.

Characteristic species of *Molinia* Meadows

The species listed below are characteristic of *Molinia* meadows in Ireland. They have been developed based on scientific analysis of hundreds of relevés (=vegetation surveys). If a *Molinia* meadow is in good condition, it will typically have at least seven positive indicator species, with at least one of these being a high-quality indicator. For further info: [Irish Semi-natural Grasslands Survey](#) (O'Neill *et al.* 2013)

High Quality Indicator Species		Positive Indicator Species	
<u>Scientific Name</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Common Name</u>
<i>Carex pulicaris</i>	Pill Sedge	<i>Achillea ptarmica</i>	Sneezewort
<i>Carum verticillatum</i>	Whorled Caraway	<i>Carex echinata</i>	Star Sedge
<i>Cirsium dissectum</i>	Meadow Thistle	<i>Carex flacca</i>	Glaucous Sedge
<i>Crepis paludosa</i>	Marsh Hawk's-beard	<i>Carex nigra</i>	Common Sedge
<i>Galium uliginosum</i>	Fen Bedstraw	<i>Carex panicea</i>	Carnation Sedge
<i>Juncus conglomeratus</i>	Compact Rush	<i>Carex viridula</i>	Yellow Sedge
<i>Lathyrus palustris</i>	Marsh Pea	<i>Equisetum palustre</i>	Marsh Horsetail
<i>Ophioglossum vulgatum</i>	Adder's-tongue Fern	<i>Filipendula ulmaria</i>	Meadowsweet
<i>Viola persicifolia</i>	Fen Violet	<i>Galium palustre</i>	Marsh Bedstraw
Orchid species		<i>Juncus acutiflorus</i>	Sharp-flowered Rush
		<i>Juncus articulatus</i>	Jointed Rush
		<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil
		<i>Luzula multiflora</i>	Heath Wood-rush
		<i>Mentha aquatica</i>	Water Mint
		<i>Molinia caerulea</i>	Purple Moor-grass
		<i>Potentilla anglica</i>	Trailing Tormentil
		<i>Potentilla erecta</i>	Tormentil
		<i>Ranunculus flammula</i>	Lesser Spearwort
		<i>Succisa pratensis</i>	Devil's-bit Scabious
		<i>Viola palustris</i>	Marsh Violet

***Molinia* Meadows: Selected Indicator Species**

HQ

High Quality Indicator Species

P

Positive Indicator Species

***Achillea ptarmica* (Sneezewort)**

P

Achillea ptarmica has a distinctive white flower with a cream coloured centre. The leaves have toothed margins, which are visible when the species is not in flower. The species is most common in the northern half of Ireland, being most frequently seen in wet grassland and marsh vegetation along lake margins. *A. ptarmica* could be confused with *A. millefolium* (Yarrow), however *A. ptarmica* has larger flowers that are fewer in number and the leaves of *A. millefolium* are finely dissected and feather-like.



***Carex nigra* (Common Sedge)**

P

Carex nigra is one of the most common Irish sedge species in wet grassland and marsh habitats. The species is readily identified by the black appearance of the fruiting head, which is due to the presence of black scales on the utricles. *C. nigra* could be confused with *Carex flacca*, another very common sedge, however the lower female spikelet of *C. flacca* is distinctively flaccid, meaning that it bobs up and down on a relatively long stalk. *C. nigra* also has two stigmas, whereas *C. flacca* has three, and the distinctly flattened utricles of *C. nigra* are also a good tell-tale sign.



***Carex pulicaris* (Flea Sedge)**

HQ

A very distinctive sedge with very fine leaves. Its utricles are widely spaced on a straight stem. As the utricles mature, they bend away from the spike and the seeds appear to jump from the stem, which gives rise to the plant's common name. The species is largely confined to damp soils where there is some degree of base enrichment.



Jessica Hamilton

***Cirsium dissectum* (Meadow Thistle)**

HQ

Cirsium dissectum is an attractive thistle species with purple/pink flowers that grows in damp, flushed soils that are usually base-enriched. Most of the plant is covered in short woolly hairs and, unlike most thistle species, the spines are relatively weak. The species is widespread in Ireland but tends to be most frequent in the west, north and centre of the island. This species is a particularly good indicator for *Molinia* meadow habitat, so if you see it, have a look around for the other typical species.



Jessica Hamilton

***Juncus conglomeratus* (Compact Rush)**

HQ

Juncus conglomeratus is a tall rush species which is characterised by a compact inflorescence and the presence of ridges on the stem. The species generally grows in areas of wet grassland and flush habitat on relatively infertile, damp soils. *J. effusus* (Soft-rush) is similar in appearance and can be found in the same habitat as *J. conglomeratus*, however the former has an open, loose inflorescence and the stems are smooth.



***Molinia caerulea* (Purple Moor-grass)**

P

A very common, robust, grass, which grows in areas of blanket bog, heath, and wet grassland where the soil is damp and peaty. In late summer the leaves and leaf sheaths are often tinged with purple. To identify *M. caerulea* vegetatively, examine the ligule, which is replaced by a ring of sparse hairs. The species can occur at a high cover and form dense tussocks in some habitats, but cover should not exceed 50% in *Molinia* meadows.



***Ophioglossum vulgatum* (Adder's-tongue Fern)**

HQ

Ophioglossum vulgatum is a low-growing fern species, which is typically found growing in areas of wet grassland and dune slack. The species is quite distinctive and is named so because its spore-bearing stalk is thought to resemble the tongue of a snake. Despite this, it is often difficult to spot because of its short stature and colouring. Small specimens of this species could be confused with the much rarer *O. azoricum*, the main distinguishing feature between the two is the number of sporangia. *O. vulgatum* has between 10-44 pairs, whereas *O. azoricum* has much fewer (4-13).



Edwina Cole

***Potentilla erecta* (Tormentil)**

P

Potentilla erecta is a very common low-growing forb with yellow flowers, and trifoliate leaves that have two stipules at the base. *P. erecta* occurs in a wide range of habitats including heath, blanket bog and acid grassland. It prefers well-drained, peaty soils. *P. erecta* could be confused with other *Potentilla* species or their hybrids.

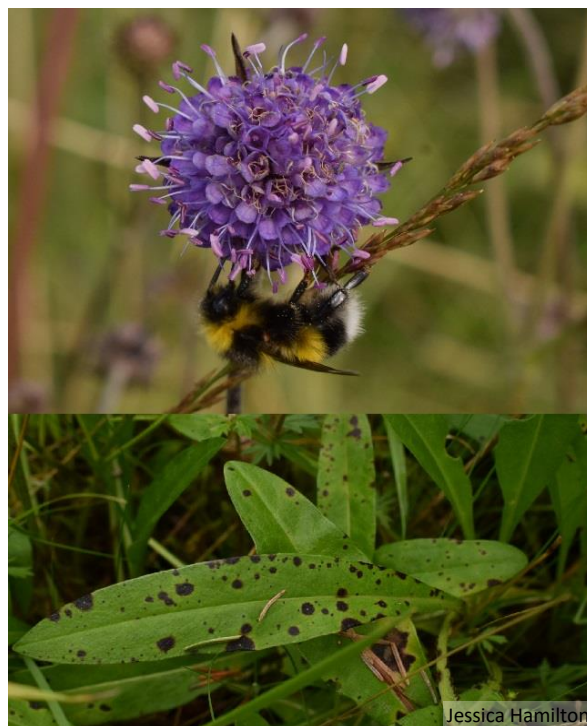


Jessica Hamilton

***Succisa pratensis* (Devil's-bit Scabious)**

P

Succisa pratensis is a very common and distinctive species of damp, often shallow, peaty soils, which occur in wet grassland and heath or cutover bog habitat. The species has a distinctive purple-blue flower that develops in late summer and has oval shaped leaves, which are often covered in blotches. *S. pratensis* is an important plant for the rare Annex I Marsh Fritillary butterfly (*Euphydryas aurinia*), as it is the sole food plant of the caterpillars of that species.



***Viola persicifolia* (Fen Violet)**

HQ

Viola persicifolia is our rarest native violet species and is generally confined to seasonally flooded areas along the margins of turloughs and lakes in the west of Ireland. The delicate flowers are a pale blue/white colour and have a greenish spur. The leaves of this species are narrow, triangular and unlike many other species of Viola, they do not form a basal rosette. Currently *V. persicifolia* is classified as 'Near Threatened' on the Irish Red List of Vascular Plants.



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In order of occurrence:

6410 Habitat, Maria Long; 6410 Habitat, BEC Consultants (©NPWS); *Achillea ptarmica*, Jessica Hamilton; *Carex nigra*, Jessica Hamilton ; *Carex pulicaris*, Jessica Hamilton; *Cirsium dissectum*, Jessica Hamilton; *Juncus conglomeratus*, Jessica Hamilton; *Molinia caerulea*, Jessica Hamilton; *Ophioglossum vulgatum*, Edwina Cole; *Potentilla erecta*, Jessica Hamilton; *Succisa pratensis*, Jessica Hamilton; *Viola persicifolia*, Eamonn Delaney.

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<https://www.npws.ie/sites/default/files/publications/pdf/RL10%20VascularPlants.pdf>

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