



Indicator plants of the High Nature Value dry grasslands of southern Transylvania

John Akeroyd and Sabin Bădărău



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Introduction

The meadows and pastures of southern Transylvania (Romania) represent some of Europe's most intact traditional farm grasslands. Large areas of low-intensive management practices, with mixed farming, little or no fertilizer input and generally low stocking densities, have allowed a huge diversity of wild flowers and wildlife to survive in what is one of the largest tracts left in Europe of High Nature Value (HNV) grassland. Not only do many species of plants and animals that have disappeared throughout of Europe persist in this special habitat, together with local rarities, but also the grasslands are a beautiful sight in summer.

These dry grasslands, mostly found on slopes and well-drained soils, are particularly flower-rich. They are as much a part of the cultural identity of southern Transylvania as the fortified Saxon churches, and like them are increasingly attracting visitors from other parts of Europe. The Sighișoara-Târnavă Mare area is not, however, a museum but a living landscape that yields income to farming communities and will contribute substantially to economic development in the region.

The rich mix of grasses and wildflowers includes many plants valuable for animal nutrition, especially clovers, sainfoin and other legumes (members of the pea and bean family). The plant life sustains insects and other invertebrates, birds and mammals, all part of the essential ecological structure of the landscape. Many of these animals help to control agricultural pests. This biodiversity is a precious resource to be conserved, which is why such farm grasslands are a priority for EU agriculture. The Transylvanian grasslands demonstrate how once-widespread land-use and farming systems associated with rich biodiversity, including fodder crops and other species required for plant breeding, may yet be a model for the agricultural and conservation policies needed to restore farmland habitat diversity across Europe.

Management of grasslands for the environment

The future of the Transylvanian grasslands needs careful strategic planning to counter economic threats and highlight their importance to European conservation. Although traditional farmers have not consciously managed grasslands for wild flowers or even to protect biodiversity, ecologists have long recognized that grasslands managed by well-established methods are the richest in this biodiversity. HNV grasslands are sensitive to nutrient enrichment and not only does nitrogen fertilizer remove ecologically sensitive and important plant species, but also grasslands that receive heavy fertiliser treatments release nitrates and other pollutants into water-courses.

Elsewhere in Europe, intensive farming, with increased use of chemical fertilizers and higher livestock densities, has degraded or destroyed grassland biodiversity. This sort of management both increases costs and often requires specially bred livestock and higher veterinary bills. There is too a high environmental cost – as carefully and traditionally managed grasslands play so many vital roles, in addition to their store of biodiversity, in maintaining the ‘public goods and services’ that arise from a healthy and stable environment. Grasslands reduce or prevent soil erosion, especially in such a geologically unstable area as the Saxon Villages, and they catch and purify rain to release clean water into rivers. Permanent grasslands store carbon that might otherwise be present as high levels of the atmospheric ‘greenhouse’ gases regarded as driving climate change. Wildflower-rich grasslands generate income from tourism, offering tourists an ideal place for horse riding, walking, painting and natural history. High quality traditional food products with a distinctive regional identity, originating from this healthy environment, are valued by consumers and demand premium prices.

Agri-environment payments for wildflower-rich grassland

Since 2008, farmers have received payments for maintaining their HNV grasslands if they manage them traditionally to encourage wild flowers and wildlife. Under the EU’s agri-environment schemes for





grassland management, grazing or the cutting of hay is allowed – but only farmyard manure or minimal amounts of chemical fertiliser may be applied to the land. General requirements for such grassland management are:

- No use of chemical fertilizer or application at very low levels, or the use of organic manures only.
- Low stocking rates, perhaps one or fewer animals per hectare.
- Cutting by machinery and starting to cut at a later date to protect ground-nesting birds, or cutting by scythe or small machine.

The following section lists and briefly describes a selection of wild flower species that indicate HNV dry grassland.

These 30 plants of dry grassland are easily identified and widespread, although some are locally scarce. Most of them flower in June-July but a few flower in spring or persist well into autumn.



Ruscuța de primăvară

Yellow Pheasant's-eye

Adonis vernalis

Forming upright clumps of feathery leaves and yellow flowers, usually on south-facing slopes, often in large numbers; protected but widely collected as a medicinal plant.

Height 10-45 cm

Flower size 20-40 mm across

Flowering season April-early May



Toporașul de câmp

Hairy Violet

Viola hirta

Only conspicuous in early spring, a low-growing, tufted plant with long-stalked, heart-shaped hairy leaves and unscented, pale or dark violet flowers.

Height 10-30 cm

Flower size 15-25 mm long

Flowering season April-early May



Poroinic

Military Orchid

Orchis militaris

A robust, upright orchid, with conical or cylindrical purplish-pink flower-spikes from late spring; the broad, pale green leaves are oval and always unspotted.

Height 30-50 cm

Flower size c.1.5 mm long, in a dense spike

Flowering season May-June



Poroinic cu trei dinți

Three-toothed Orchid

Orchis tridentata

A small orchid, with unspotted spear-shaped leaves and a slightly untidy, short cylindrical spike of pink flowers dotted and lined darker purplish-pink.

Height 10-30 cm

Flower size 3-5 mm long

Flowering season May-June



Buzdugan

Jurinea

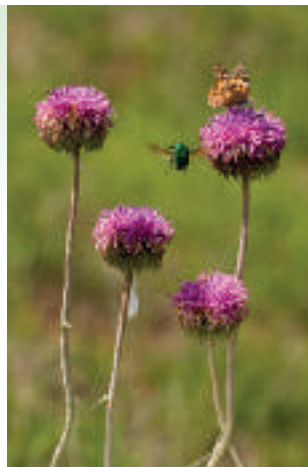
Jurinea mollis

A tall elegant thistle with cobweb-like hairs, upright stems that are leafless in the upper part, and large solitary reddish-purple flower-heads in early summer.

Height 30-100 cm

Flower size 20-50 mm across

Flowering season late May-June



Frăsinel

Burning Bush

Dictamnus albus

An upright, shrub-like plant, especially on steep slopes with scrub, with leaves in 3-6 irregular pairs and conspicuous, dark-veined pink flowers in long clusters.

Height 30-80 cm

Flower size 40-50 mm across

Flowering season late May-June



Jaleșul de stepă

Nodding Sage

Salvia nutans

Steep, south-facing, often in large numbers, flowering in early summer; the distinctive nodding violet flower-heads become upright as the seeds grow.

Height 40-150 cm

Flower size 12-16 mm long, in dense heads

Flowering season late May-June



Șopârlița de câmp

Large Speedwell

Veronica austriaca

A rather slender, erect plant with flower-spikes in pairs, mostly growing in pastures, flowering in early summer; the similar but smaller *Veronica prostrata* flowers in spring.

Height 20-80 cm

Flower size 10-12 mm across

Flowering season May-June



Iarba laptelui

Greater Milkwort

Polygala major

Superficially orchid-like, with crimson flowers in long, loose clusters, a showy plant forming patches in meadows and pastures, sometimes flowering well into autumn.

Height 15-50 cm

Flower size 10-15 mm long

Flowering season May-September



Luceafăr

Purple Viper's-grass

Scorzonera purpurea subsp. *purpurea*

A slender, branched plant with grass-like leaves and solitary, upright, branched flowering stems, each with several pale lilac flowers.

Height 20-60 cm

Flower size flower-heads 20-30 mm across

Flowering season late May-July



Capul șarpelui de foc

Red Viper's-bugloss

Echium maculatum

An upright, unbranched bristly plant, especially on hillocks and slopes, often with a single stem and with numerous narrow leaves and long spikes of dark red flowers.

Height 25-60 cm

Flower size 9-12 mm long

Flowering season May-June



In galben

Yellow Flax

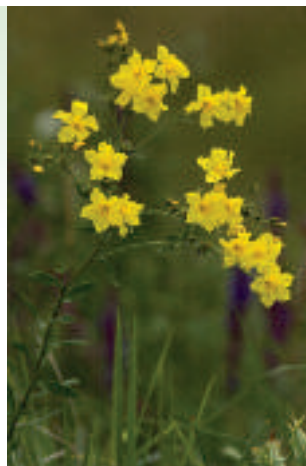
Linum flavum

A conspicuous, upright hairless plant, often on steeper slopes; other species of wild flax, with blue, pink or white flowers, also indicate HNV grassland.

Height 20-40 cm

Flower size 20-25 mm across

Flowering season May-July



In mare

Hairy Flax

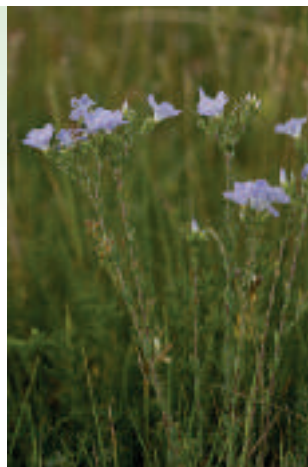
Linum hirsutum

An upright, branched, hairy plant, with oval or narrowly oval leaves and clusters of numerous, rather pale blue flowers.

Height 20-45 cm

Flower size 25-30 mm across

Flowering season June to July



Clopoței siberieni

Siberian Bellflower

Campanula sibirica

A hairy plant, the tough upright stems solitary or in a group, with spear-shaped, bluntly toothed leaves and a loose cluster of nodding bell-shaped blue flowers.

Height 20-50 cm

Flower size 15-25 mm long

Flowering season June-August



Drob

White Dwarf-broom

Chamaecytisus albus

A hairy, more or less upright leafy plant, the leaves with 3 leaflets, the pea-like flowers 5-8 in flattish heads, white or cream.

Height 20-60 cm

Flower size 15-20 mm long

Flowering season June-August



Vătămatoare

Kidney Vetch

Anthyllis vulneraria

An upright or spreading plant with slender leafy stems, leaves with paired leaflets and one larger end-leaflet, and domed clusters 2-3 cm across of yellow or orange flowers.

Height 20-50 cm

Flower size 15-18 mm long

Flowering season late May to July



Garofița de câmp

Charterhouse Pink

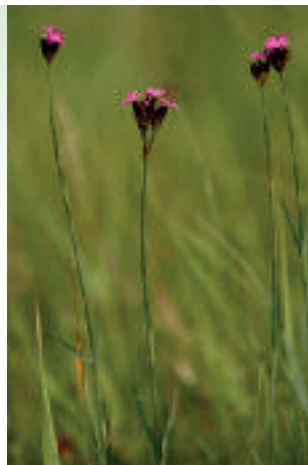
Dianthus carthusianorum

An upright tufted plant, with pairs of narrow, pointed, spear-shaped leaves along the stems and bright pink flowers in dense clusters surrounded by brown scales.

Height 30-65 cm

Flower size 10-20 mm across

Flowering season May-August



Trifoi de munte

Mountain Clover

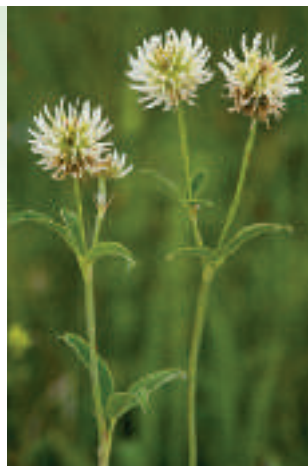
Trifolium montanum

A short-hairy, upright plant with long-stalked, round flower-heads, white fading to brown, often growing with rarer species; other clovers, with pink, purplish or yellow flowers, also occur.

Height 30-60 cm

Flower size 7-9 mm long, in dense heads

Flowering season June-September



Sparcetă

Sainfoin

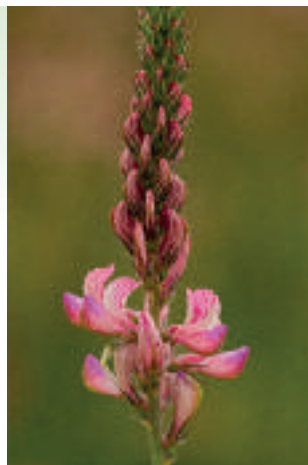
Onobrychis viciifolia

A short-hairy, sprawling plant of flower-rich meadows and slopes, the leaves with 6-14 pairs of leaflets, the pea-like dark-veined pink flowers in stalked clusters 3-8 cm.

Height 30-75 cm

Flower size 8-14 mm long

Flowering season June-September



Lipitoare

Squinancywort

Asperula cynanchica

A sprawling, rather untidy plant with slender stems, short needle-like leaves in 2s or 4s, and numerous small flowers.

Height 10-35 cm

Flower size c.5 mm long

Flowering season June-September



Sânziene

Lady's Bedstraw

Galium verum

An upright short-hairy plant, with small fragrant flowers in branched clusters, and needle-like leaves in whorls of 8-12, especially in hay-meadows; St John's day ritual herb.

Height 20-120 cm

Flower size 2-3.5 mm across, in dense masses

Flowering season June-August



Coronistea

Crown Vetch

Coronilla varia

A robust sprawling plant with branched zigzag stems, leaves with numerous leaflets and dense stalked heads of pink pea-like flowers.

Height 30-120 cm long

Flower size 10-15 mm long, in heads 3-5 cm across

Flowering season June-August



Busuiocel roz

Wall Germander

Teucrium chamaedrys

A low-growing woody plant of slopes and banks, forming dense leafy patches, with long heads of dark purplish-pink flowers.

Height 10-40 cm

Flower size c. 10 mm long

Flowering season June to September



Sulițica

Dorycnium

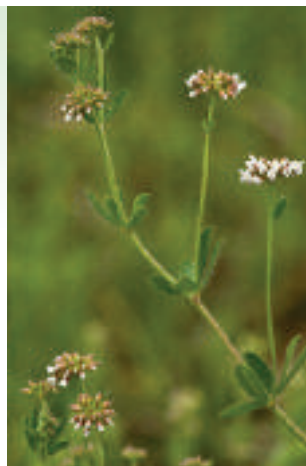
Dorycnium pentaphyllum subsp. *herbaceum*

A short-hairy, more or less upright or sprawling plant, the leaves with 5 leaflets, the compact stalked heads with 12-25 pea-like white flowers.

Height 20-60 cm

Flower size 3-5 mm long

Flowering season June-September



Sipica albă

Yellow Scabious

Scabiosa ochroleuca

A slender, upright branched plant that flowers through the summer, with a few of the pale yellow or cream flowers persisting well into autumn.

Height 30-80 cm

Flower size flower-heads 20-30 mm across

Flowering season June-September



Busuioc de câmp

Greater Self-heal

Prunella grandiflora

A hairy plant with oval leaves and purple-blue flowers in dense heads. Another species, *Prunella laciniata*, with toothed leaves and pale yellow flowers, also occurs in dry pastures.

Height 20-40 cm

Flower size 25-30 mm long, in compact heads

Flowering season June-September



Ochiul galben

Sword-leaved Fleabane

Inula ensifolia

An upright, almost hairless daisy, sometimes forming large patches on dry slopes, with numerous narrow, pointed leaves and usually solitary golden-yellow flowers.

Height 10-40 cm

Flower size 30-50 mm across

Flowering season July-August



Cimbrișor

Wild Thyme

Thymus glabrescens

A low-growing, rather woody plant, especially in the shorter grass of pastures and on ant-hills, with purplish-pink flowers in dense heads; the leaves smell when bruised.

Height 5-15 cm

Flower size 6-8 mm long

Flowering season June-September



Garofița

Deptford Pink

Dianthus armeria

A branched upright plant of pastures, with pairs of narrow, pointed, spear-shaped leaves along the stems and spotted, dark pink flowers in small leafy clusters.

Height 20-50 cm

Flower size 10-15 mm across

Flowering season late June-August



Trâmbița ciobanului

Fringed Gentian

Gentianopsis ciliata

A small upright plant with spear-shaped leaves and showy blue flowers, solitary or in clusters, the petals edged with whitish hairs, flowering in autumn.

Height 10-30 cm

Flower size 20-30 mm across

Flowering season September-October



Notes



The aim of the STIPA project is to improve the conservation of two dry grassland habitats in the Sighișoara-Târnava Mare Natura 2000 site which are of European priority importance under the EU Habitats Directive:

- 6210* Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) with important orchid sites
- 6240* Sub-Pannonic steppic grasslands

The wild flowers in this book are an important indication of the presence of rare dry grasslands, whose conservation is of European importance.

We hope that this booklet will encourage local people, including the farmers who manage these grasslands, schoolchildren, students and others, to take an active part in the STIPA project.

We can all help to preserve this natural heritage by working together.

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