

Natura 2000 habitat 6230 : Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)



Habitat 6230 consists of species-rich permanent grasslands on poor, acid soils. These can be sandy, but also loamy soils are frequent. Many sites are dry, but mesophile to humid situations with specific plants are also included. Although soils show a considerable variety, they are always very poor in phosphorous and the production of biomass is low. The vegetations of Habitat 6230 can be highly different, but always characterised by continuity : habitat 6230 consists of established grasslands, no pioneering situations. The grasslands look closed and dominated by perennial species of grasses and herbs.

In the vegetation science these grasslands are also known as the Nardetea, named after matgrass (*Nardus stricta*). This species can be dominant but is also often not present. Other typical species are heath grass (*Danthonia decumbens*), tormentil (*Potentilla erecta*) and heath bedstraw (*Galium saxatile*). Grasslands dominated by common bent (*Agrostis capillaris*) with species like sheep's-bit (*Jasione montana*), harebell (*Campanula rotundifolia*) and mouse-ear hawkweed (*Hieracium pilosella*) also are included in habitat 6230.

Where to find it?

Grasslands of habitat 6230 can be found all over the European Union from Ireland to Greece and from Portugal to Finland, from lowland over the hills to montane regions. Often they occur in the landscape together with the dry heathlands of habitat 4030, which are situated on even poorer, on average more acid soils. Historically seen the grasslands of habitat 6230 were better fit for modern agriculture, which has destroyed the typical vegetation of most of them in the last century. As a result in the heath-landscapes of many regions the poor grasslands of habitat 6230 are now less present than the heathlands of habitat 4030 situated on the most extremely barren soils.

## Typical species

Next to matgrass numerous typical plants are mentioned in the European habitat description (Interpretation Manual of European Union Habitats, version EUR 28, in EUNIS, the European Nature Information System) :

- wolf's bane (*Arnica montana*)
- pale sedge (*Carex pallescens*)
- carnation sedge (*Carex panicea*)
- sheep's-fescue (*Festuca ovina*)
- heath bedstraw (*Galium saxatile*)



- marsh gentian (*Gentiana pneumonanthe*) (photo Vilda/Lars Soetinck)
- imperforate St John's-wort (*Hypericum maculatum*)
- bitter vetch (*Lathyrus montanus*)
- baldmoney (*Meum athamanticum*)
- common lousewort (*Pedicularis sylvatica*)
- lesser butterfly-orchid (*Platanthera bifolia*)
- common milkwort (*Polygala vulgaris*)



- tormentil (*Potentilla erecta*) (photo Willy Verbeke)
- heath speedwell (*Veronica officinalis*)
- heath dog-violet (*Viola canina*)

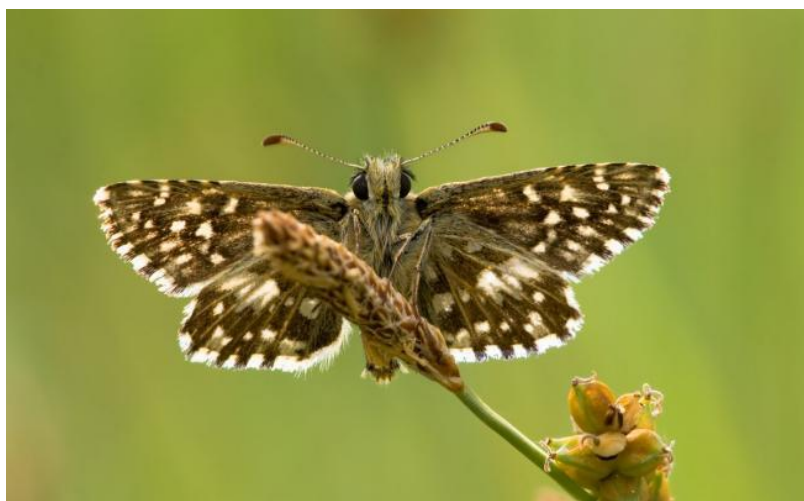
The following 3 species mentioned are very rare in Belgium, for sure more rare than habitat 6230 itself.

- mountain everlasting (*Antennaria dioica*)
- spotted cat's-ear (*Hypochaeris maculata*)
- heath sedge (*Carex ericetorum*)

The following 4 species mentioned are not present or extinct in Belgian habitat 6230 sites.

- small white orchid (*Pseudorchis albida*)
- bearded bellflower (*Campanula barbata*)
- a species of hawkbit (*Leontodon helveticus*)
- a species of cinquefoil (*Potentilla aurea*)

Typical animals :



- grizzled skipper (*Pyrgus malvae*)
- alcon blue (*Phengaris alcon*)





- field cricket (*Gryllus campestris*) (photo Vilda/Rollin Verlinde)
- green mountain grasshopper (*Miramella alpina*)

### Management and threats

Grasslands of habitat 6230 can be mown or grazed. When the grassland is mown it is important not to leave the mown material on the soil, as the typical plants are not adapted to a layer of litter. For nectar-seeking insects, for animal shelter and for the production of seeds, one should never mow the entire area of a habitat 6230 site at once. It is good to leave at least 15% unmown each time. Grazing and mowing can be combined on the same site, for example by mowing in the beginning of summer and grazing later in the same year. Mostly sheep are used for grazing in habitat 6230, but races of cattle with low demands are also possible and locally even the standard management.

As the vegetations of these grasslands are adapted to very low amounts of phosphorous in the soil, no fertilisation should be applied at all, except for what the grazing animals drop spontaneously. Nitrogen-pollution from the atmosphere can destroy the equilibrium between species, resulting in species-poor vegetations dominated by a single grass-species (for example purple moor-grass/*Molinia caerulea* or soft-grass-/*Holcus* sp.). Although these grassland are by nature rather acidophilous, on many sites soils have turned too acid for critical species because of nitrogen-pollution.

When all management is ceased the sites turn spontaneously into forests after a few or more years. Too intensive recreation results in species-poor vegetations, although some recreation can be well tolerated. Ploughing is in general extremely destructive for habitat 6230; recovery is only possible in the very long-term.



It is possible to recreate habitat 6230 out of recently created forests by removing the trees and the litter-layer. This is preferably done in the neighbourhood of still existing habitat 6230 sites as only some species have a long-lasting stock of living seeds in the soil (for example sedges or tormentil). Out of fertilised fields recovery is very difficult. Mostly the amount of phosphorous in the soil is far too high to be removed by mowing; only taking away a thick layer of top soil is in this last case an (expensive) solution.

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