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RED LIST

Species which are endangered by AIPS (Alien Invasive Plant Species).

Sand Autumn Crocus (*Colchicum arenarium*)

Sand autumn crocus is an endemic species of the Great Hungarian Plain and typical species of the Pannonian sand steppes. In Slovakia, several populations of this species are located in the Čenkov forest. It usually grows in the undergrowth which provides milder microclimate during the summer months. However, the invasive species occurring in the site such as Goldenrod and The Tree of Heaven are changing soil conditions around them by creating a thick sand, this makes successful seed germination and further growth of Sand Autumn Crocus more difficult. They represent significant threat to the species. The Slovak population is isolated and represents the northern border of overall species distribution. The closest population is situated 50 km south in Hungary where Sand Autumn Crocus is strictly protected. It is a species of community interest (Habitats Directive) protected by law and is included in the Red List as critically endangered species (CR) in Slovakia.

Sand Iris (*Iris humilis* subsp. *arenaria*)

Sand Iris is a Pontic-Pannonian endemic species. It grows on the sunny rocky steppes and rocky hillsides from lowlands to hills. In Slovakia, it grows on three sites in surroundings of the Čenkov forest in the Danubian Plain. Sand Iris is protected by law, it is considered a species of community interest and is included in the Red List as critically endangered (CR). Invasive species represent a threat for this species as well as for Sand Autumn Crocus (*Colchicum arenarium*).

Sea Grape (*Ephedra distachya*)

This species grows on sand habitats and forest edges in lowlands. In Slovakia, it occurs in the Čenkov forest which represents the northern border of overall distribution of the species. It is also known as medicinal herb with a content of alkaloid ephedrine, which is used in the treatment of asthma, for the release of nasal congestion, for the low pressure and narcolepsy. When used in a long term and excessively, it may cause psychic and physical addiction. In Slovakia it is classified as critically endangered (CR) and protected by law here, as well as in Hungary.

Syrenia cana

Syrenia cana grows on alkaline and neutral sands in lowlands. It is considered endemic by some experts, occurring only in the area at the central part of Danube river. In Slovakia, this species grows on the remains of sand dunes between Nové Zámky and Štúrovo, it is legally protected and is considered critically endangered (CR).

Gypsophila fastigiata* subsp. *arenaria

Gypsophila fastigiata subsp. *arenaria* is Pannonian endemic species which grows on sands and loess (especially calcium) in lowlands, less frequently in the hills. Distribution area includes Austria, Hungary, southern Slovakia, Romania, Serbia, Croatia. It grows in the Čenkov forest in Slovakia, where it is protected by law, considered a species of national importance as well as endangered species (EN).

Shiny Bugseed (*Corispermum nitidum*)

Shiny Bugseed grows on sandy soils in lowlands. The Northwestern border of its distribution extends through Central Europe - Austria (currently extinct), Slovakia and Hungary. In Slovakia, it occurs rarely on sandy habitats in Danubian Lowland near cities Nové Zámky, Komárno and Štúrovo. It is considered endangered (EN) and legally protected in Slovakia, it is legally protected also in Hungary.

Solitary Clematis (*Clematis integrifolia*)

Characteristic species of wet meadows and flooded river floodplains. In Slovakia it represents a typical species of Morava river floodplain, it rarely occurs by the Danube river. The presence of Solitary Clematis is dependent on regular mowing or grazing, but is directly threatened by presence and spreading of *Solidago canadensis* and *Solidago gigantea*. It is legally protected in Slovakia and Hungary, in Slovakia it is also considered as vulnerable (VU) species.

Siberian Iris (*Iris sibirica*)

Siberian iris grows in boggy and peaty meadows, in wetlands, which range from lowlands to foothills. In Slovakia, it grows on several sites, e.g. Devín lake, eastern Liptov basin, eastern Štiavnica highland, Morava floodplain. Species is protected by law and considered vulnerable (VU) in Slovakia, it is legally protected in Hungary.

Smoke bush (*Cotinus coggygria*)

In Central Europe, the species grows on sunny rocky slopes in lowlands and hills up to 5 metres as spherical shrub or small tree. Nowadays it is grown in many countries as an ornamental plant. In the past, it was cultivated as a source of tannins and dyes. The species is toxic. In Slovakia it is considered vulnerable (VU).

Alkanet (*Alkanna tinctoria*)

In Slovakia, Alkanet grows on steppes and forest steppes in the complex of the Čenkov forest in the Danubian Plain which represents its northern border of overall distribution. In the past, it was used in dyeing, cosmetics and food industry. The root contains chemicals that stain fabrics in red. It is protected by law, the species of national importance and it is considered critically endangered (CR) in Slovakia. *Alkanna tinctoria* is threatened mainly by overgrown of stronger competitive invasive species of herbs (Giant Goldenrod) and trees (Black Locust, Tree of Heaven).

Five Anther Spurry (*Spergula pentandra*)

The species prefers sunny rocky slopes, sands, dry grasslands and light pine groves where it seeks acidic, nutrient-poor and humus-poor soils. It grows from lowlands to hilly areas and blooms from April to May. The species was introduced to North America. In Slovakia, Five Anther Spurry is protected by law, is considered as the species of national importance as well as vulnerable species (VU).

Common bluebell (*Scilla vindobonensis*)

Scilla vindobonensis is a Pannonian species bound to wetlands of Danube alluvium and its tributaries (Lower Austria, Hungary, Slovakia, in isolated populations also in Serbia and Bulgaria) with an overlap to adjacent area. In Slovakia, it grows in the Danubian Lowland and by the Morava river, several sites are located in the catchment of rivers Váh, Nitra and Žitava. It is a thermophilic species that grows in floodplain forests, alluvial plains of rivers and streams, also in wet hornbeam and oak-hornbeam forests, in the area from lowlands to hills. This species is threatened by overgrowth of invasive species of trees such as Ashleaf maple (*Negundo aceroides*) and american species of ash trees (*Fraxinus americana*) as well as by intensive methods of forest management. In Slovakia, it is considered vulnerable species (VU) protected by law.

Summer snowflake (*Leucojum aestivum*)

The species grows in wet grasslands, in the riparian shrubbery and floodplain forests in lowland area. Unlike the spring snowflake (*Leucojum vernum*), it blooms later in mid-spring, sometimes until June. Modification of river flows in the past led to a significant reduction of its natural habitats. In Slovakia, it occurs in the catchment of the Ipel' and Morava river, also by Jurské lake in the Small Carpathians. Summer snowflake is protected by law and is classified as near threatened species (NT). It is threatened by intensive methods of forest management and invasive species in the same way as *Scilla vindobonensis*.