

Ecological problems of Austrian pine plantations (Júlia Tamás)

Austrian pine (*Pinus nigra*) originating in Southeast Europe is non-native to Hungary. The first experimental stands were planted at the end of the 19th century, primarily for soil preservation purposes. At present, Austrian pine stands cover 70,300 hectares, that is 4.2% of the total forested area of Hungary. However, extensive monocultures have numerous negative effects on landscape and biodiversity. The dense stands, for example, impede original local flora and fauna to find conditions for life. Since Austrian pine is an invasive species, the seedlings penetrate easily into the neighbouring protected grasslands. Their ability to improve soil quality has not been verified yet. Moreover, these stands are highly inflammable due to the high resin content of the accumulating dead fallen pine needles.

Vegetation recovery studies on areas of burned Austrian pine forests (Júlia Tamás)

Inflammability is one of the most important problems of Austrian pine monocultures. After a long dry period, large areas were destroyed by fire in Hungary in the 1990s. We chose examination sites in the Buda Hills where Austrian pine was planted in the habitat of dolomite grasslands. According to our results, very intensive changes occurred in the first years after the fire. The number of species and the total plant cover rapidly increased. Initially, annual weedy plants dominated, which were gradually replaced by perennial plants indicating natural conditions. Ten years after the fire, the vegetation is similar in several aspects to the dolomite grasslands, reflecting the high regeneration capability of these communities.

Studying seedlings of the Hungarian flora (Júlia Tamás)

In the middle of the 20th century, several illustrated documentations of the Hungarian flora were made by Vera Csapody's artworks. Her own book on seedling identification was published in 1968 (Csapody V. 1968: *Keimlingsbestimmungsbuch der Dikotyledonen*. Akadémiai Kiadó, Budapest). A major part of the nearly 1,500 species discussed in this book are ornamental plants. In the present research, priority is given

to seedlings of species inhabiting Hungary. The recognisable seedlings are documented by photos or drawings at the site of our field work. Collected herbarium specimens are added to the seedling collection of the Department of Botany, while, as in the case of other species, we collect seeds of the plant for germination. The results of germinations help us to understand ecological characteristics and propagation conditions of these plants. It also provides valuable information either about rare and protected or non-native spreading species.