

Summary of butterfly monitoring 2020

Within the framework of the cross-border INTERREG project "AgriNatur AT-HU", butterfly monitoring was carried out in the Danube Floodplain National Park in the Upper Lobau in Vienna, 2019 and 2020. In the second year of the project, six organically managed arable fields (potatoes, green pea/sorghum millet, winter wheat, winter barley, and 2x winter rye), their edges, a fallow and its edge, as well as a dry grassland were visited 10 times each in the period from 27.04. to 09.09.2020. The project aims to evaluate the quality of different management practices for butterflies and to establish biodiversity-promoting measures.

A total of 41 butterfly species were observed, representing about 40% of the species currently occurring in Vienna, which can therefore be classified as species-rich. A total of 632 individuals were counted. This species richness is due to the fact that the project area is composed of diverse habitats, such as riparian forests, fallow land, mowing meadows, and dry grasslands. Most species, 31 in total, were counted on the six field margins. This is due to the different compositions of the field margins, such as mown fallows with attractive flowering plants, woody fringes with herbaceous vegetation, nectar and caterpillar food plants, hiding places, and sunny spots. The dry grassland had 19 species, the fallow 18, and the edge of the fallow 13. The six fields had the lowest number of species, 11 in total. Since the winter rye was very dense and thus did not allow weeds to pass through, only 1 butterfly species was found on this field. Of the 632 individuals sighted, 70% occurred on the 6 field margins (249) and the dry grassland (170). Species on the Red List for Vienna were found 6 on the dry grassland, 3 each on the fallow and the edge of the fallow, 6 on the 6 field margins, and 2 on the 6 fields. Red List species that were exclusively sighted in 2020 are the Crowned Blue (*Plebejus argyrognomon*), the Silver-green Blue (*Polyommatus coridon*), the Kidney-spotted Fritillary (*Thecla betulae*) and the Alexis Blue (*Glaucopsyche alexis*). The most common species recorded in 2020 were the Large Ox-eye (*Maniola jurtina*), the Small Cabbage Whitefly (*Pieris rapae*), the Chessboard (*Melanargia galathea*), and the Argus Bluefly (*Plebejus argus*) (which is a Red List species).

If the surveys of 2019 and 2020 are combined, a total of 46 butterfly species were recorded in the project area. An increase in the number of individuals from 2019 to 2020 was achieved at the two field margins, where biodiversity-promoting measures have already been implemented through the cultivation of special seed mixtures. At one of these field margins, 50% more butterflies were detected than in the previous year.

To promote butterfly species on the Red List and those that only occur in small numbers in the project area in the future, targeted measures are needed. Such as the creation of biodiversity promotion areas along selected field margins, with planting of preferred nectar and caterpillar food plants, which are maintained perennially (overwintering possibilities) and extensively (max. one mowing/year, partial mowing). Promotion of herbaceous species, e.g. by preventing grass encroachment through the removal of mown material after drying. In the arable areas, the cultivation of special flowering mixtures between the rows is useful, as well as leaving the emerging vegetation standing after harvesting until at least late autumn. Instead of cereals, crops that are suitable as a source of nectar could be cultivated. Copses of sloes, hawthorn, or other native species provide nectar and are attractive as caterpillar food.