

**“Phytocoenological and ecological study on the expansive species
Digitalis purpurea L. in Gdańsk Pomerania.”
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In the flora of Poland *Digitalis purpurea* L. (common foxglove) has a specific status – on the one hand it is a kenophyte and invasive plant species at a regional level, on the other hand it had, until recently, been legally protected (1983 – 2001). It is most commonly found in the Sudetes and the Carpathian Mountains, but it is also increasingly recorded in coastal areas, including Gdańsk Pomerania. It occurs in open forests, scrubs, clearing sites and windfalls (being a diagnostic species of the *Epilobietea angustifolii* class), as well as in synanthropic habitats.

The aim of the research was to determine the expansion of *D. purpurea* in Gdańsk Pomerania in terms of the diversity of habitats it occupies. A total of 598 common foxglove sites were found, which are concentrated in the northern part of Gdańsk Pomerania. The studied species was recorded in 19 plant communities, including 8 forest and 11 non-forest phytocoenosis. *D. purpurea* was most commonly found in communities where it co-dominated with *Agrostis capillaris* or *Deschampsia flexuosa*. The studied species achieved optimal conditions for development in well-lit sites, in both mineral and organic, acidic soils. Among the vascular plants that most often co-exist with the common foxglove are: *Juncus effusus*, *Deschampsia flexuosa*, *Betula pendula*, *Rubus idaeus* and *Oxalis acetosella*, whilst among bryophytes – *Polytrichastrum formosum*.

Modeling of potential bioclimatic niches based on the maximum entropy method (MaxEnt version 3.3.2) showed that the potential geographical range that the common foxglove may occupy is much wider than the range it actually does. As a subatlantic species, it finds favorable conditions for development not only in Western Europe, but also in the north-east part of the continent, including the Baltic coast. The main climatic factors limiting distribution of *D. purpurea* are: temperature seasonality, annual precipitation and precipitation of the coldest quarter.