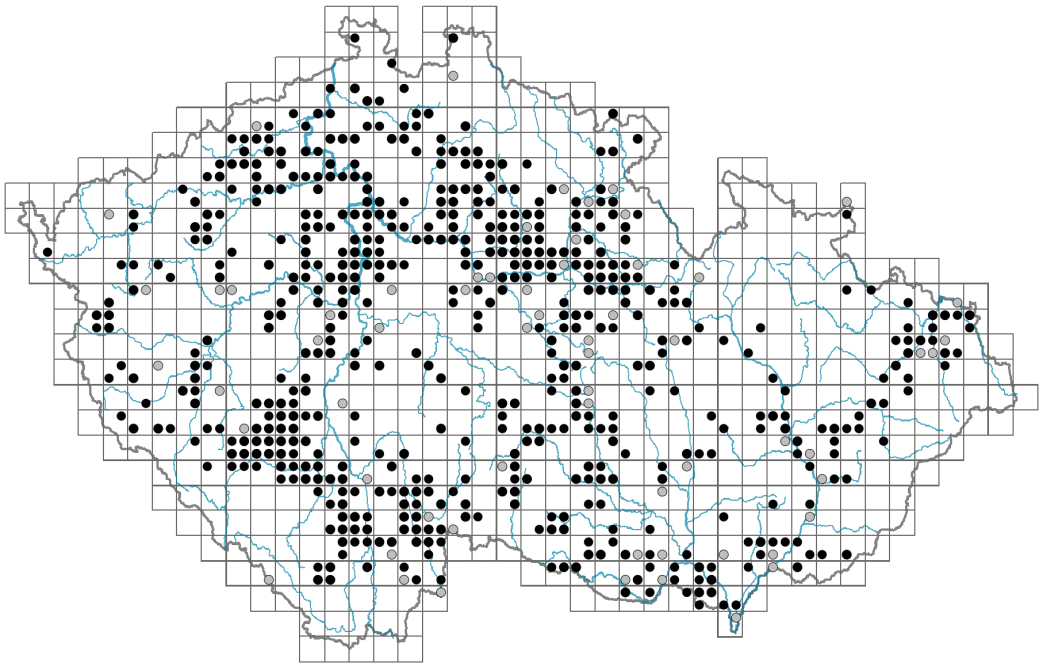
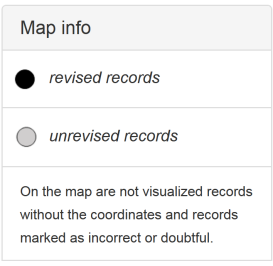
Zannichellia palustris

Distribution





Habitus and growth type

Height [m]: **0.02–0.4**
Growth form: **clonal herb**
Life form: **hydrophyte**
Life strategy (Pierce method based on leaf traits): **R**
Life strategy (Pierce method, C-score): **0.7 %**
Life strategy (Pierce method, S-score): **0 %**
Life strategy (Pierce method, R-score): **99.3 %**

Leaf

Leaf presence and metamorphosis: **leaves present, not modified**
Leaf arrangement (phyllotaxis): **opposite, verticillate**
Leaf shape: **simple – entire**
Stipules: **present**
Petiole: **absent**
Leaf life span: **evergreen**
Leaf anatomy: **hydromorphic**

Flower

Flowering period [month]: **May–August**
Flower colour: **green**

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Perianth type: **reduced or absent**
Perianth fusion: **reduced**
Inflorescence type: **dichasium**
Dicliny: **monoecious**
Generative reproduction type: **facultative autogamy**
Pollination syndrome: **water-pollination, selfing**

Fruit, seed and dispersal

Fruit type: **dry fruit – achene/cypsela/samara**
Fruit colour: **green, brown**
Reproduction type: **by seed/spores and vegetatively**
Dispersal unit (diaspore): **fruit, infrutescence or its part, shoot fragment**
Dispersal strategy: **Wolffia (mainly hydrochory)**
Myrmecochory: **non-myrmecochorous (b)**

Belowground organs and clonality

Shoot metamorphosis: **stolon**
Storage organ: **stolon**
Type of clonal growth organ: **stolon**
Freely dispersible organs of clonal growth: **present**
Shoot life span (cyclicity): **monocyclic shoots prevailing**
Branching type of stem-derived organs of clonal growth: **monopodial**
Primary root: **absent**
Persistence of the clonal growth organ [year]: **1.3**
Number of clonal offspring: **6**
Lateral spreading distance by clonal growth [m]: **0.1**
Clonal index: **5**

Bud bank

Number of buds per shoot at the soil surface (root buds excluded): **15**
Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **7**
Number of buds per shoot at a depth greater than 10 cm (root buds excluded): **0**
Size of the belowground bud bank (root buds excluded): **22**
Depth of the belowground bud bank (root buds exluded) [cm]: **2**
Number of buds per shoot at the soil surface (root buds included): **15**
Number of buds per shoot at a depth of 0–10 cm (root buds included): **7**
Number of buds per shoot at a depth greater than 10 cm (root buds included): **0**
Size of the belowground bud bank (root buds included): **22**
Depth of the belowground bud bank (root buds included) [cm]: **2**

Trophic mode

Parasitism and mycoheterotrophy: **autotrophic**
Carnivory: **non-carnivorous**
Symbiotic nitrogen fixation: **no nitrogen-fixing symbionts**

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Karyology

Chromosome number (2n): **24 (12, 34, 36)**
Ploidy level (x): **4 (2, 6)**
2C genome size [Mbp]: **756.08**
1Cx monoploid genome size [Mbp]: **189.02**
Genomic GC content: **39.2 %**

Taxon origin

Origin in the Czech Republic: **native**

Ecological indicator values

Ellenberg-type indicator values

Light indicator value: **6 – transition between values 5 and 7; rarely at less than 20% of diffuse radiation incident in an open area**
Temperature indicator value: **6 – transition between values 5 and 7**
Moisture indicator value: **12 – permanently or almost permanently submerged aquatic plant**
Reaction indicator value: **8 – transition between values 7 and 9, occurring mostly in calcium-rich conditions**
Nutrient indicator value: **8 – pronounced nutrient indicator**
Salinity indicator value: **3 – β-mesohaline, mostly on soils with low salt content**

Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.5**
Herb layer disturbance frequency indicator value: **-0.5**
Whole-community disturbance severity indicator value: **0.13**
Herb layer disturbance severity indicator value: **0.17**
Whole-community structure based disturbance indicator value: **0.53**
Herb layer structure-based disturbance indicator value: **0.54**

Habitat and sociology

Occurrence in habitats

3 Aquatic vegetation

3A Macrophytic vegetation of eutrophic and mesotrophic still waters: **2 – optimum**
3C Macrophytic vegetation of oligotrophic lakes and pools: **1 – rare occurrence**

4 Wetland and riverine herbaceous vegetation

4A Reed-beds of eutrophic still waters: **1 – rare occurrence**
4B Halophilous reed and sedge beds: **1 – rare occurrence**
4C Eutrophic vegetation of muddy substrata: **1 – rare occurrence**
4E Reed vegetation of brooks: **1 – rare occurrence**
4H Vegetation of low annual hygrophilous herbs: **1 – rare occurrence**

Affinity to the forest environment

Affinity to the forest environment in Thermophyticum: **0 – taxon that does not spontaneously occur in Czech forests**
Affinity to the forest environment in Mesophyticum and Oreophyticum: **0 – taxon that**

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does not spontaneously occur in Czech forests

Diagnostic taxon

Diagnostic taxon of associations: **VBB14 *Parvo-Potamo-Zannichellietum pedicellatae***

Constant taxon

Constant taxon of associations: **VBB14 *Parvo-Potamo-Zannichellietum pedicellatae***

Dominant taxon

Dominant taxon of associations: **VBB14 *Parvo-Potamo-Zannichellietum pedicellatae***

Ecological specialization indices

Ecological specialization index for all vegetation types: **5.6**
Ecological specialization index for non-forest vegetation: **5.6**

Distribution and frequency

Floristic zone: **boreal, northern temperate, southern temperate, submeridional, meridional, subtropical, tropical, austral or antarctic**
Floristic region: **circumpolar**
Distribution range extension along the continentality gradient: **10**
Elevational belt in the Czech Republic: **lowlands, colline belt, submontane belt**
Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 333
taxon.data.freq_in_quad: 612

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.4 %**
Occurrence frequency in vegetation plots with a cover above 5%: **51.9 %**
Occurrence frequency in vegetation plots with a cover above 25%: **40.7 %**
Occurrence frequency in vegetation plots with a cover above 50%: **24.1 %**
Mean percentage cover in vegetation plots: **27.5 %**
Maximum percentage cover in vegetation plots: **88 %**

Number of habitats with taxon occurrence in the Czech Republic

Number of narrow habitats in which the taxon occurs: **7**
Number of narrow habitats in which the taxon has its optimum: **1**
Number of broad habitats in which the taxon occurs: **2**
Number of broad habitats in which the taxon has its optimum: **1**

Threats and protection

Red List 2017 (national categories): **taxon is not on the Red List**
Red List 2017 (IUCN categories): **LC(NA) – least concern (taxon is not on the Red List)**
Legal protection: **not protected by law**

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