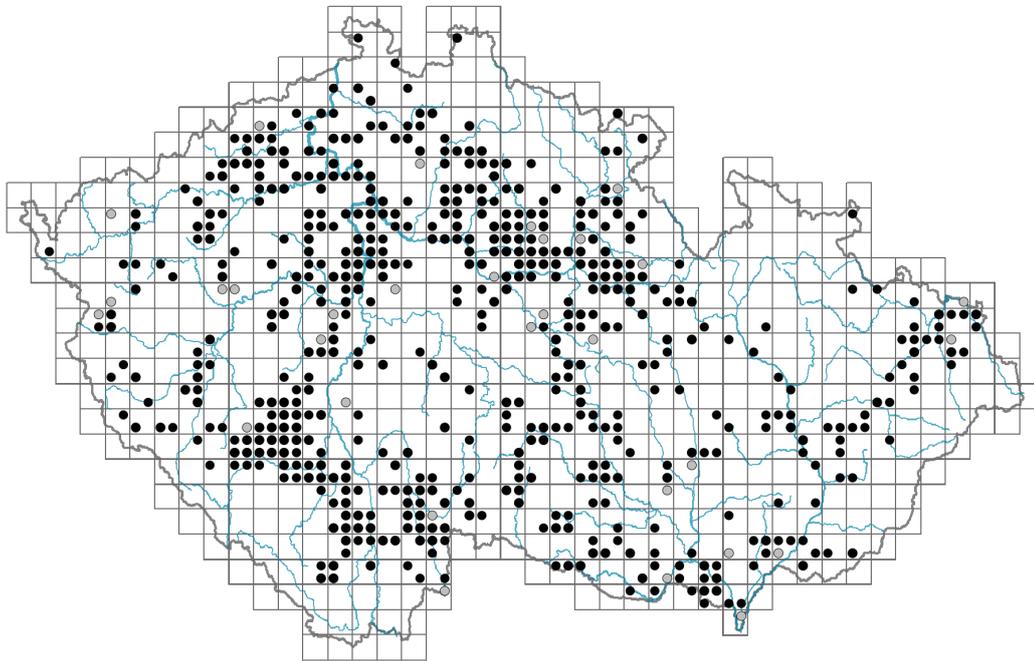


# Zannichellia palustris

## Distribution



© Daniela Štábová 2016

### Map info

● revised records

○ unrevised records

On the map are not visualized records without the coordinates and records marked as incorrect or doubtful.

## 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**

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, infructescence 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 (cyclicality): **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 excluded) [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**

## 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 -  $\beta$ -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**

**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: 321

taxon.data.freq\_in\_quad: 577

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**