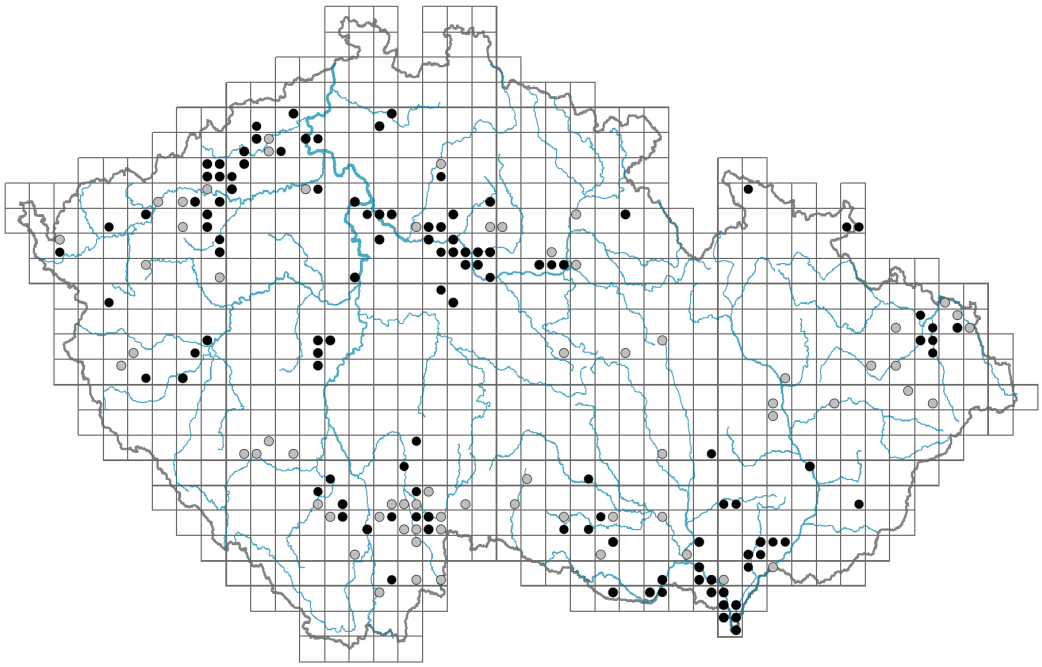
# *Ceratophyllum submersum*

## Distribution





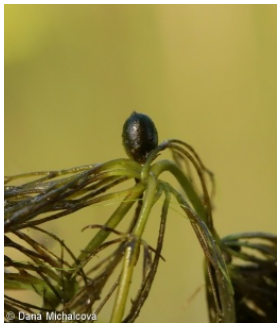

Map info

*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]: **0.3–1.2**
Growth form: **clonal herb**
Life form: **hydrophyte**

### Leaf

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

### Flower

Flowering period [month]: **June–September**
Flowering phase: **8 Clematis vitalba-Galium sylvaticum (mid-summer)**
Flower colour: **green**
Flower symmetry: **actinomorphic**
Perianth type: **reduced**
Perianth fusion: **reduced**

*© 2014–2026 Pladias – Citation: Pladias – Database of the Czech Flora and Vegetation. www.pladias.cz*




Inflorescence type: **flores solitarii**
Dicliny: **monoecious**
Generative reproduction type: **facultative autogamy**
Pollination syndrome: **water-pollination**

## Fruit, seed and dispersal

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

## Belowground organs and clonality

Shoot metamorphosis: **turion**
Storage organ: **turion**
Type of clonal growth organ: **turion**
Freely dispersible organs of clonal growth: **present**
Primary root: **absent**
Persistence of the clonal growth organ [year]: **1**
Number of clonal offspring: **6**
Lateral spreading distance by clonal growth [m]: **0**
Clonal index: **7**

### Bud bank

Number of buds per shoot at the soil surface (root buds excluded): **5**
Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **0**
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): **5**
Depth of the belowground bud bank (root buds exluded) [cm]: **1**
Number of buds per shoot at the soil surface (root buds included): **5**
Number of buds per shoot at a depth of 0–10 cm (root buds included): **0**
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): **5**
Depth of the belowground bud bank (root buds included) [cm]: **1**

## Trophic mode

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

## Karyology

Chromosome number (2n): **40 (72)**
Ploidy level (x): **2 (4)**
2C genome size [Mbp]: **1496.36**
1Cx monoploid genome size [Mbp]: **748.18**

*© 2014–2026 Pladias – Citation: Pladias – Database of the Czech Flora and Vegetation. www.pladias.cz*

Genomic GC content: **40.3 %**

## Taxon origin

Origin in the Czech Republic: **native**

## Ecological indicator values

### Ellenberg-type indicator values

Light indicator value: **5 – semi-shade plant, only exceptionally occurring in full light, but usually at more than 10% of the diffuse radiation incident in an open area**
Temperature indicator value: **8 – transition between values 7 and 9**
Moisture indicator value: **12 – permanently or almost permanently submerged aquatic plant**
Reaction indicator value: **7 – indicator of slightly acidic to slightly basic conditions, never occurring in very acidic conditions**
Nutrient indicator value: **7 – occurring at nutrient-rich sites more often than at average sites and only exceptionally at poor sites**
Salinity indicator value: **2 – oligohaline, often on soils with very low salt content**

### Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.31**
Herb layer disturbance frequency indicator value: **-0.31**
Whole-community disturbance severity indicator value: **0.19**
Herb layer disturbance severity indicator value: **0.23**
Whole-community structure based disturbance indicator value: **0.52**
Herb layer structure-based disturbance indicator value: **0.55**

## Habitat and sociology

### Occurrence in habitats

#### 3 Aquatic vegetation

3A Macrophytic vegetation of eutrophic and mesotrophic still waters: **2 – optimum**

#### 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: **2 – optimum**

### 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 alliances: **VAC *Hydrocharition morsus-ranae***
Diagnostic taxon of associations: **VAC04 *Potamo-Ceratophylletum submersi***

### Constant taxon

Constant taxon of associations: **VAC04 *Potamo-Ceratophylletum submersi***

### Dominant taxon

*© 2014–2026 Pladias – Citation: Pladias – Database of the Czech Flora and Vegetation. www.pladias.cz*

Dominant taxon of associations: **VAC04 *Potamo-Ceratophylletum submersi***

### Ecological specialization indices

Ecological specialization index for all vegetation types: **5.5**

Ecological specialization index for non-forest vegetation: **5.5**

### Colonization ability

Index of colonization success (ICS): **1**

## Distribution and frequency

Floristic zone: **northern temperate, southern temperate, submeridional, meridional, subtropical, tropical**

Floristic region: **Europe, Asia**

Continentality degree: **6**

Distribution range extension along the continentality gradient: **5**

Elevational belt in the Czech Republic: **lowlands, colline belt**

Expansive taxon in the region: **Bohemian Thermophyticum, Bohemian Moravian Mesophyticum, Pannonian Thermophyticum**

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 152

taxon.data.freq_in_quad: 230

### Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.3 %**

Occurrence frequency in vegetation plots with a cover above 5%: **62.8 %**

Occurrence frequency in vegetation plots with a cover above 25%: **56.4 %**

Occurrence frequency in vegetation plots with a cover above 50%: **46.2 %**

Mean percentage cover in vegetation plots: **43.6 %**

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: **4**

Number of narrow habitats in which the taxon has its optimum: **2**

Number of broad habitats in which the taxon occurs: **2**

Number of broad habitats in which the taxon has its optimum: **2**

## Threats and protection

Red List 2017 (national categories): **C3 – vulnerable taxon**

Red List 2017 (IUCN categories): **LC – least concern**

Legal protection: **endangered taxon**

*© 2014–2026 Pladias – Citation: Pladias – Database of the Czech Flora and Vegetation. www.pladias.cz*