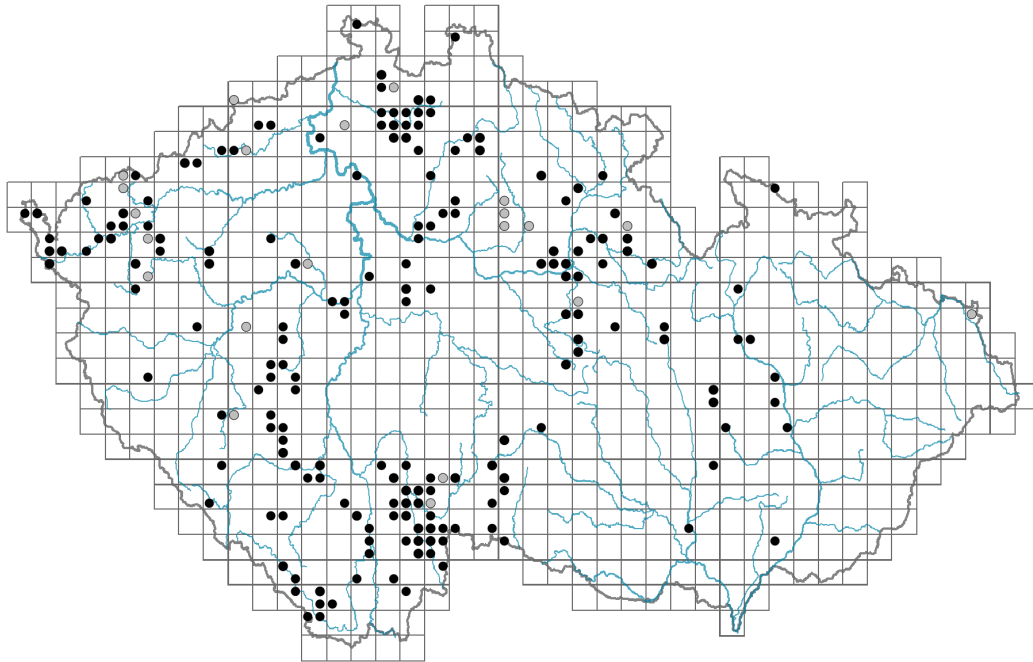


# *Sparganium natans*

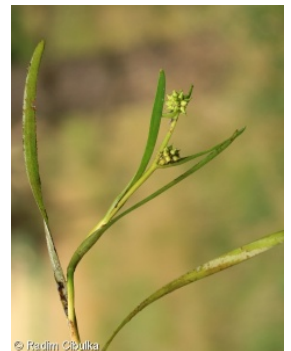
## Distribution



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]: **0.1-0.4**

Growth form: **clonal herb**

Life form: **hydrophyte**

Life strategy: **CS - competitor/stress-tolerator**

Life strategy (Pierce method based on leaf traits): **R/CR**

Life strategy (Pierce method, C-score): **22.7 %**

Life strategy (Pierce method, S-score): **0 %**

Life strategy (Pierce method, R-score): **77.4 %**

## Leaf

Leaf presence and metamorphosis: **leaves present, not modified**

Leaf arrangement (phyllotaxis): **alternate**

Leaf shape: **simple - entire**

Stipules: **absent**

Petiole: **absent**

Leaf life span: **evergreen**

Leaf anatomy: **hydromorphic**

## Flower

Flowering period [month]: **June-August**

1 mm



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Flowering phase: **8 Clematis vitalba-Galium sylvaticum (mid-summer)**

Flower colour: **green**

Perianth type: **reduced**

Perianth fusion: **reduced**

Inflorescence type: **racemus e capitulis compositus**

Dicliny: **monoecious**

Generative reproduction type: **facultative allogamy**

Pollination syndrome: **wind-pollination**

### **Fruit, seed and dispersal**

Fruit type: **dry fruit - achene/cypsela/samara**

Reproduction type: **by seed/spores and vegetatively**

Dispersal unit (diaspore): **fruit, infrutescence or its part**

Dispersal strategy: **Wolffia (mainly hydrochory)**

Myrmecochory: **non-myrmecochorous (b)**

### **Belowground organs and clonality**

Shoot metamorphosis: **stolon**

Storage organ: **stolon**

Type of clonal growth organ: **hypogeogenous rhizome**

Freely dispersible organs of clonal growth: **absent**

Shoot life span (cyclicality): **dicyclic or polycyclic shoots prevailing**

Branching type of stem-derived organs of clonal growth: **sympodial**

Primary root: **absent**

Persistence of the clonal growth organ [year]: **2**

Number of clonal offspring: **3.5**

Lateral spreading distance by clonal growth [m]: **0.13**

Clonal index: **5**

#### **Bud bank**

Number of buds per shoot at the soil surface (root buds excluded): **0**

Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **10**

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): **10**

Depth of the belowground bud bank (root buds excluded) [cm]: **5**

Number of buds per shoot at the soil surface (root buds included): **0**

Number of buds per shoot at a depth of 0–10 cm (root buds included): **10**

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): **10**

Depth of the belowground bud bank (root buds included) [cm]: **5**

### **Trophic mode**

Parasitism and mycoheterotrophy: **autotrophic**

Carnivory: **non-carnivorous**

Symbiotic nitrogen fixation: **no nitrogen-fixing symbionts**

## Karyology

Chromosome number (2n): **30**

Ploidy level (x): **2**

2C genome size [Mbp]: **960.72**

1Cx monoploid genome size [Mbp]: **480.36**

Genomic GC content: **42.4 %**

## Taxon origin

Origin in the Czech Republic: **native**

## Ecological indicator values

### Ellenberg-type indicator values

Light indicator value: **7 - half-light plant, mostly occurring at full light, but also in the shade up to about 30% of diffuse radiation incident in an open area**

Temperature indicator value: **5 - moderate heat indicator, occurring from lowland to montane belt, mainly in submontane-temperate areas**

Moisture indicator value: **11 - aquatic plant rooted under water, but at least temporarily with leaves above the surface, or a plant floating on the water surface**

Reaction indicator value: **4 - transition between values 3 and 5**

Nutrient indicator value: **3 - occurring at nutrient-poor sites more frequently than at average sites and exceptionally at rich sites**

Salinity indicator value: **0 - not salt tolerant, glycophyte**

### Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.68**

Herb layer disturbance frequency indicator value: **-0.68**

Whole-community disturbance severity indicator value: **0.02**

Herb layer disturbance severity indicator value: **0.08**

Whole-community structure based disturbance indicator value: **0.67**

Herb layer structure-based disturbance indicator value: **0.65**

## Habitat and sociology

### Occurrence in habitats

#### 3 Aquatic vegetation

3C Macrophytic vegetation of oligotrophic lakes and pools: **2 - optimum**

#### 4 Wetland and riverine herbaceous vegetation

4A Reed-beds of eutrophic still waters: **1 - rare occurrence**

4E Reed vegetation of brooks: **1 - rare occurrence**

#### 5 Vegetation of springs and mires

5E Acidic moss-rich fens and peatland meadows: **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 classes: [VD \*Littorelletea uniflorae\*](#)

Diagnostic taxon of alliances: [VDC \*Sphagno-Utricularion\*](#)

Diagnostic taxon of associations: [VDC01 \*Sparganio minimi-Utricularietum intermediae\*](#)

Constant taxon

Constant taxon of alliances: [VDC \*Sphagno-Utricularion\*](#)

Constant taxon of associations: [VDC01 \*Sparganio minimi-Utricularietum intermediae\*](#)

Dominant taxon

Dominant taxon of associations: [VDC01 \*Sparganio minimi-Utricularietum intermediae\*](#)

Ecological specialization indices

Ecological specialization index for all vegetation types: **4.5**

Ecological specialization index for non-forest vegetation: **4.5**

**Distribution and frequency**

Floristic zone: **boreal, northern temperate, southern temperate, submeridional**

Floristic region: **circumpolar**

Distribution range extension along the continentality gradient: **6**

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

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 155

taxon.data.freq\_in\_quad: 210

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.1 %**

Occurrence frequency in vegetation plots with a cover above 5%: **80.6 %**

Occurrence frequency in vegetation plots with a cover above 25%: **71 %**

Occurrence frequency in vegetation plots with a cover above 50%: **48.4 %**

Mean percentage cover in vegetation plots: **45.6 %**

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: **1**

Number of broad habitats in which the taxon occurs: **3**

Number of broad habitats in which the taxon has its optimum: **1**

**Threats and protection**

Red List 2017 (national categories): **C2b - endangered taxon, rare and declining**

Red List 2017 (IUCN categories): **VU - vulnerable**

Legal protection: **endangered taxon**