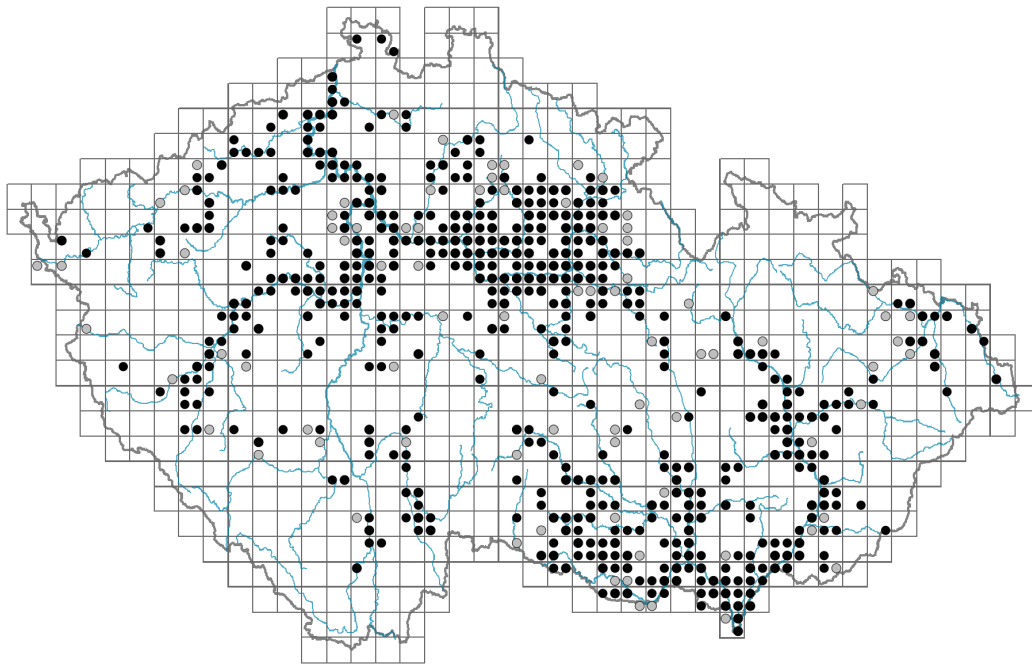


# *Butomus umbellatus*

## Distribution



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### 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]: **0.3-1.5**

Growth form: **clonal herb**

Life form: **geophyte**

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

Life strategy (Pierce method based on leaf traits): **S/CS**

Life strategy (Pierce method, C-score): **27 %**

Life strategy (Pierce method, S-score): **72.3 %**

Life strategy (Pierce method, R-score): **0.8 %**

## Leaf

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

Leaf arrangement (phyllotaxis): **rosulate**

Leaf shape: **simple - entire**

Stipules: **absent**

Petiole: **absent**

Leaf life span: **summer green**

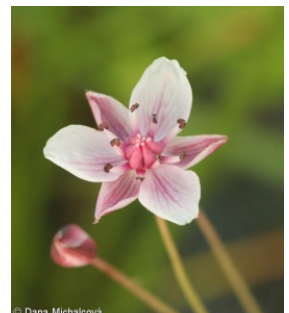
Leaf anatomy: **helomorphic**

## Flower

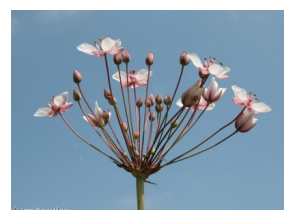
Flowering period [month]: **June-August**



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

Flower colour: **white, pink**

Flower symmetry: **actinomorphic**

Perianth type: **homochlamydeous**

Perianth fusion: **free**

Inflorescence type: **pseudumbrella**

Dicliny: **synoecious**

Generative reproduction type: **mixed mating**

Pollination syndrome: **insect-pollination**

## Fruit, seed and dispersal

Fruit type: **dry fruit - cluster of follicles**

Fruit colour: **brown**

Reproduction type: **mostly vegetatively, rarely by seed/spores**

Dispersal unit (diaspore): **seed, bulbil or tuber**

Dispersal strategy: **Sparganium (mainly autochory and hydrochory)**

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

## Belowground organs and clonality

Shoot metamorphosis: **rhizome**

Storage organ: **rhizome**

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

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]: **3.3**

Number of clonal offspring: **5.7**

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

Clonal index: **6**

### Bud bank

Number of buds per shoot at the soil surface (root buds excluded): **12**

Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **3**

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): **15**

Depth of the belowground bud bank (root buds excluded) [cm]: **2**

Number of buds per shoot at the soil surface (root buds included): **12**

Number of buds per shoot at a depth of 0–10 cm (root buds included): **3**

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): **15**

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): **39 (26)**

Ploidy level (x): **3 (2)**

2C genome size [Mbp]: **11040.36**

1Cx monoploid genome size [Mbp]: **3680.12**

Genomic GC content: **45.1 %**

## 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: **6 - transition between values 5 and 7**

Moisture indicator value: **10 - aquatic plant that survives long periods without soil flooding**

Reaction indicator value: **7x - indicator of slightly acidic to slightly basic conditions, never occurring in very acidic conditions (generalist)**

Nutrient indicator value: **7 - occurring at nutrient-rich sites more often than at average sites and only exceptionally at poor sites**

Salinity indicator value: **1 - salt tolerant, mostly on low-salt to salt-free soils, but occasionally on slightly salty soils**

### Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-0.64**

Herb layer disturbance frequency indicator value: **-0.64**

Whole-community disturbance severity indicator value: **0.18**

Herb layer disturbance severity indicator value: **0.23**

Whole-community structure based disturbance indicator value: **0.54**

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**

3B Macrophytic vegetation of water streams: **1 - rare occurrence**

#### 4 Wetland and riverine herbaceous vegetation

4A Reed-beds of eutrophic still waters: **2 - optimum**

4B Halophilous reed and sedge beds: **1 - rare occurrence**

4C Eutrophic vegetation of muddy substrata: **2 - optimum**

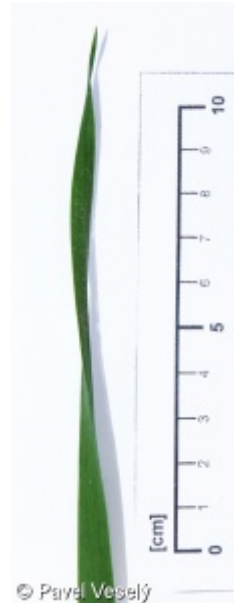
4D Riverine reed vegetation: **1 - rare occurrence**

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

4F Mesotrophic vegetation of muddy substrata: **1 - rare occurrence**

4G Tall-sedge beds: **1 - rare occurrence**

4H Vegetation of low annual hygrophilous herbs: **1 - rare occurrence**



4I Vegetation of nitrophilous 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 alliances: [MCC \*Eleocharito palustris-Sagittarion sagittifoliae\*](#)

Diagnostic taxon of associations: [MCC10 \*Butometum umbellati\*](#), [VBB17 \*Najadetum minoris\*](#)

Constant taxon

Constant taxon of associations: [MCC10 \*Butometum umbellati\*](#), [VBD05 \*Ranunculetum baudotii\*](#)

Dominant taxon

Dominant taxon of associations: [MCC10 \*Butometum umbellati\*](#)

Ecological specialization indices

Ecological specialization index for all vegetation types: **3.9**

Ecological specialization index for non-forest vegetation: **3.9**

Colonization ability

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

Index of colonization potential (ICP): **1**

## Distribution and frequency

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

Floristic region: **Europe, Asia**

Distribution range extension along the continentality gradient: **8**

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

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 291

taxon.data.freq\_in\_quad: 590

Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **1 %**

Occurrence frequency in vegetation plots with a cover above 5%: **42.9 %**

Occurrence frequency in vegetation plots with a cover above 25%: **35.9 %**

Occurrence frequency in vegetation plots with a cover above 50%: **25.4 %**

Mean percentage cover in vegetation plots: **26 %**

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: **11**

Number of narrow habitats in which the taxon has its optimum: **3**

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): **C4a - near threatened taxon**

Red List 2017 (IUCN categories): **NT - near threatened**

Legal protection: **not protected by law**