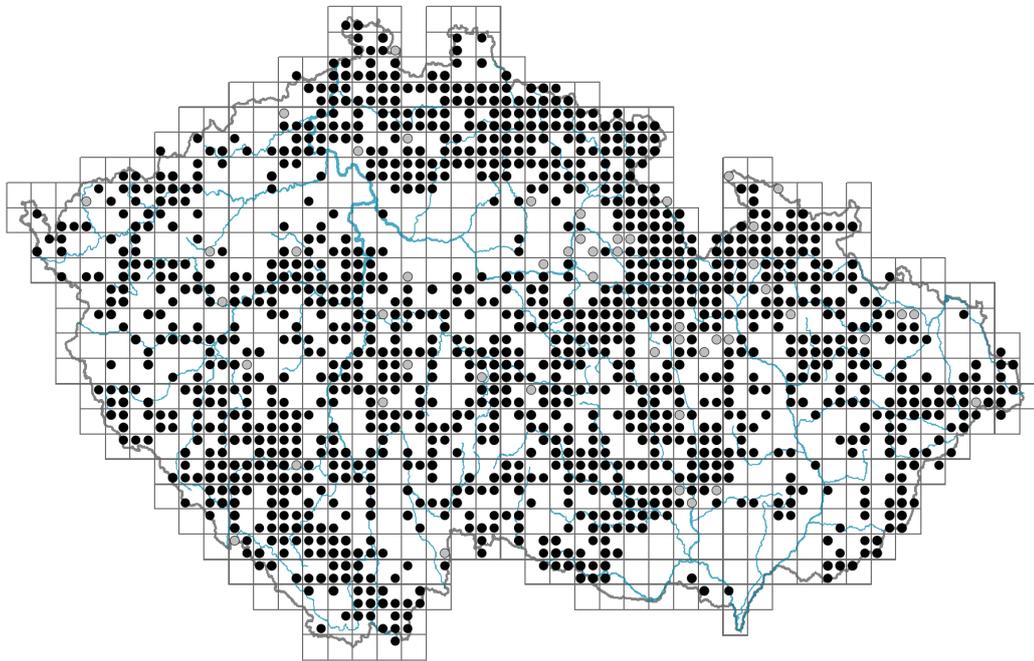


# *Cystopteris fragilis*

## Distribution



### Map info

● revised records

○ unrevised records

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



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## Habitus and growth type

Height [m]: **0.08-0.25**

Growth form: **clonal herb**

Life form: **hemicryptophyte**

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

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

Life strategy (Pierce method, C-score): **31.1 %**

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

Life strategy (Pierce method, R-score): **68.9 %**



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## Leaf

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

Leaf arrangement (phyllotaxis): **rosulate**

Leaf shape: **compound - imparipinnate**

Stipules: **absent**

Petiole: **present**

Leaf life span: **summer green**

Leaf anatomy: **hygromorphic**



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## Flower

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

Dicliny: **synoecious**

## **Fruit, seed and dispersal**

Reproduction type: **only by seed/spores**

Dispersal unit (diaspore): **spore**

Dispersal strategy: **Lycopodium (mainly anemochory)**

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: **absent**

Primary root: **absent**

Persistence of the clonal growth organ [year]: **4**

Number of clonal offspring: **0.5**

Lateral spreading distance by clonal growth [m]: **0.01**

Clonal index: **2**

### **Bud bank**

Number of buds per shoot at the soil surface (root buds excluded): **3**

Number of buds per shoot at a depth of 0–10 cm (root buds excluded): **15**

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): **18**

Depth of the belowground bud bank (root buds excluded) [cm]: **4**

Number of buds per shoot at the soil surface (root buds included): **3**

Number of buds per shoot at a depth of 0–10 cm (root buds included): **15**

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): **18**

Depth of the belowground bud bank (root buds included) [cm]: **4**

## **Trophic mode**

Parasitism and mycoheterotrophy: **autotrophic**

Carnivory: **non-carnivorous**

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

## **Karyology**

Chromosome number (2n): **168**

Ploidy level (x): **4**

2C genome size [Mbp]: **12791.26**

1Cx monoploid genome size [Mbp]: **3197.82**

Genomic GC content: **44.6 %**

## **Taxon origin**

Origin in the Czech Republic: **native**

## Ecological indicator values

### Ellenberg-type indicator values

Light indicator value: **5x - semi-shade plant, only exceptionally occurring in full light, but usually at more than 10% of the diffuse radiation incident in an open area (generalist)**

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

Moisture indicator value: **6 - transition between values 5 and 7**

Reaction indicator value: **6 - transition between values 5 and 7**

Nutrient indicator value: **5 - occurring at moderately nutrient-rich sites, and less frequently at poor and rich sites**

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

### Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-1.75**

Herb layer disturbance frequency indicator value: **-1.17**

Whole-community disturbance severity indicator value: **0.17**

Herb layer disturbance severity indicator value: **0.11**

Whole-community structure based disturbance indicator value: **0.44**

Herb layer structure-based disturbance indicator value: **0.26**

## Habitat and sociology

### Occurrence in habitats

#### 1 Vegetation of cliffs, screes and walls

1A Calcareous cliffs: **2 - optimum**

1B Siliceous cliffs and block fields: **2 - optimum**

1C Walls: **2 - optimum**

1D Mobile calcareous screes: **1 - rare occurrence**

#### 2 Alpine and subalpine grasslands

2B Subalpine tall-forb and tall-grass vegetation: **1 - rare occurrence**

#### 5 Vegetation of springs and mires

5A Hard-water springs with tufa formation: **1 - rare occurrence**

5B Lowland to montane soft-water springs: **1 - rare occurrence**

#### 8 Dry grasslands

8A Hercynian dry grasslands on rock outcrops: **1 - rare occurrence**

8B Submediterranean dry grasslands on rock outcrops: **1 - rare occurrence**

8F Thermophilous forest fringe vegetation: **1 - rare occurrence**

#### 11 Heathlands and scrub

11A Dry lowland to subalpine heathlands: **1 - rare occurrence**

11D Subalpine acidophilous *Pinus mugo* scrub: **1 - rare occurrence**

11H Subalpine deciduous scrub: **1 - rare occurrence**

11L Tall mesic and xeric shrub: **1 - rare occurrence**

11R Scrub and pioneer woodland of forests clearings: **1 - rare occurrence**

#### 12 Forests

12B Alluvial forests: **1 - rare occurrence**

12C Oak-hornbeam forests: **1 - rare occurrence**

12D Ravine forests: **2 - optimum**  
12E Herb-rich beech forests: **1 - rare occurrence**  
12F Limestone beech forests: **1 - rare occurrence**  
12G Acidophilous beech forests: **1 - rare occurrence**  
12K Acidophilous oak forests: **1 - rare occurrence**  
12L Boreo-continental pine forests: **1 - rare occurrence**  
12R Acidophilous spruce forests: **1 - rare occurrence**  
12S Basiphilous spruce forests: **1 - rare occurrence**  
12T Robinia pseudacacia plantations: **1 - rare occurrence**  
12W Pine and larch plantations: **1 - rare occurrence**

### 13 Anthropogenic vegetation

13E Perennial nitrophilous herbaceous vegetation of mesic sites: **1 - rare occurrence**  
13F Herbaceous vegetation of forests clearings and Rubus scrub: **1 - rare occurrence**

### Affinity to the forest environment

Affinity to the forest environment in Thermophyticum: **2.1 - taxon occurring both in the forest and open vegetation**

Affinity to the forest environment in Mesophyticum and Oreophyticum: **2.1 - taxon occurring both in the forest and open vegetation**

### Diagnostic taxon

Diagnostic taxon of classes: [SA \*Asplenietea trichomanis\*](#)

Diagnostic taxon of alliances: [SAA \*Cystopteridion\*](#)

Diagnostic taxon of associations: [ACA02 \*Saxifrago paniculatae-Agrostietum alpinae\*](#), [SAA01 \*Cystopteridetum fragilis\*](#), [SAA02 \*Asplenietum rutae-murario-trichomanis\*](#), [SAC02 \*Festuco pallentis-Saxifragetum rosaceae\*](#), [SCA01 \*Gymnocarpietum robertiani\*](#)

### Constant taxon

Constant taxon of alliances: [SAA \*Cystopteridion\*](#)

Constant taxon of associations: [ACA02 \*Saxifrago paniculatae-Agrostietum alpinae\*](#), [SAA01 \*Cystopteridetum fragilis\*](#), [SAC02 \*Festuco pallentis-Saxifragetum rosaceae\*](#)

### Dominant taxon

Dominant taxon of associations: [SAA01 \*Cystopteridetum fragilis\*](#)

### Ecological specialization indices

Ecological specialization index for all vegetation types: **4.4**

Ecological specialization index for non-forest vegetation: **3.6**

Ecological specialization index for forest vegetation: **5.8**

### Colonization ability

Index of colonization success (ICS): **2**

Index of colonization potential (ICP): **2**

Optimum successional age [years]: **11**

### Distribution and frequency

Floristic zone: **arctic, boreal, northern temperate, southern temperate, submeridional, meridional, subtropical, tropical, austral or antarctic**

Floristic region: **circumpolar**

Distribution range extension along the continentality gradient: **7**

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

Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 549

taxon.data.freq\_in\_quad: 1347

### Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **0.6 %**

Occurrence frequency in vegetation plots with a cover above 5%: **26.7 %**

Occurrence frequency in vegetation plots with a cover above 25%: **4.2 %**

Occurrence frequency in vegetation plots with a cover above 50%: **0.5 %**

Mean percentage cover in vegetation plots: **5.6 %**

Maximum percentage cover in vegetation plots: **63 %**

### Number of habitats with taxon occurrence in the Czech Republic

Number of narrow habitats in which the taxon occurs: **29**

Number of narrow habitats in which the taxon has its optimum: **4**

Number of broad habitats in which the taxon occurs: **7**

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

### 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**