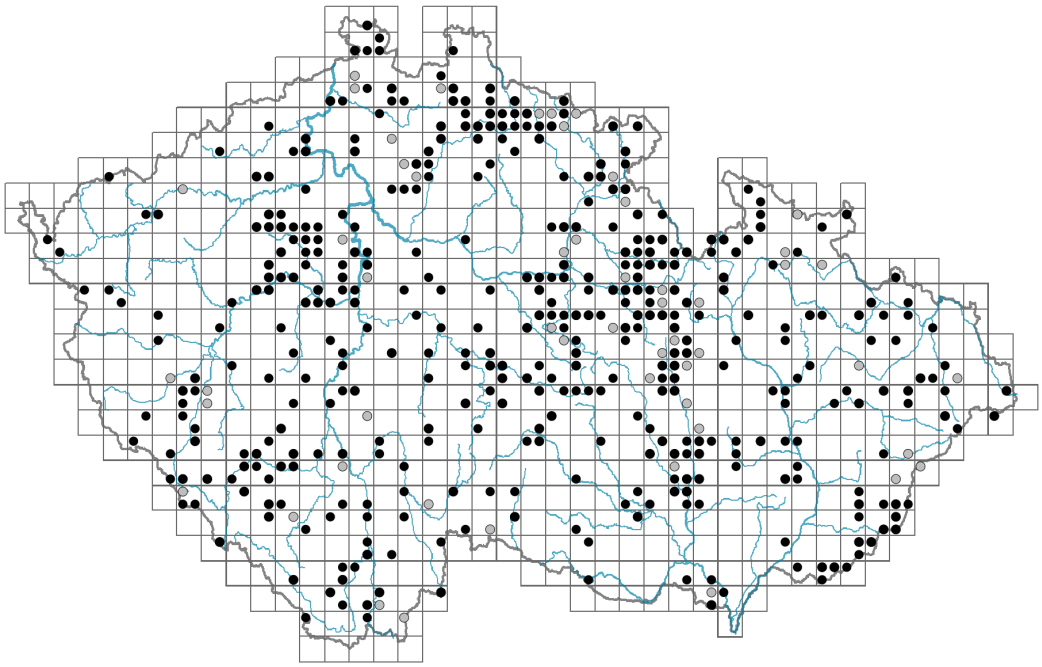
# *Gymnocarpium robertianum*

## 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]: **0.15–0.5**
Growth form: **clonal herb**
Life form: **geophyte**
Life strategy: **CS – competitor/stress-tolerator**

### Leaf

Leaf presence and metamorphosis: **leaves present, not modified**
Leaf arrangement (phyllotaxis): **alternate**
Leaf shape: **compound – bipinnate, compound – tripinnate**
Stipules: **absent**
Petiole: **present**
Leaf life span: **summer green**
Leaf anatomy: **hygromorphic**

### Flower

Flowering period [month]: **June–August**
Dicliny: **synoecious**

### Fruit, seed and dispersal

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

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Dispersal unit (diaspore): **seed**
Dispersal strategy: **Lycopodium (mainly anemochory)**
Myrmecochory: **non-myrmecochorous (b)**

## Belowground organs and clonality

Shoot metamorphosis: **rhizome**
Storage organ: **rhizome**
Type of clonal growth organ: **hypogeogenous rhizome**
Freely dispersible organs of clonal growth: **absent**
Shoot life span (cyclicity): **monocyclic shoots prevailing**
Branching type of stem-derived organs of clonal growth: **dichotomous**
Primary root: **absent**
Persistence of the clonal growth organ [year]: **4**
Number of clonal offspring: **0.5**
Lateral spreading distance by clonal growth [m]: **0.13**
Clonal index: **3**

### 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): **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): **15**
Depth of the belowground bud bank (root buds exluded) [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): **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): **15**
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): **160**
Ploidy level (x): **4**
2C genome size [Mbp]: **11124.72**
1Cx monoploid genome size [Mbp]: **2781.18**
Genomic GC content: **43.6 %**

## Taxon origin

Origin in the Czech Republic: **native**

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## 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: **5 – indicator of fresh soils, focus on soils of average moisture, missing on wet and on soils that frequently dry out**
Reaction indicator value: **8 – transition between values 7 and 9, occurring mostly in calcium-rich conditions**
Nutrient indicator value: **4 – transition between values 3 and 5**
Salinity indicator value: **0 – not salt tolerant, glycophyte**

### Indicator values for disturbance

Whole-community disturbance frequency indicator value: **-1.38**
Herb layer disturbance frequency indicator value: **-1.14**
Whole-community disturbance severity indicator value: **0.19**
Herb layer disturbance severity indicator value: **0.2**
Whole-community structure based disturbance indicator value: **0.49**
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: **1 – rare occurrence**
1C Walls: **1 – rare occurrence**
1D Mobile calcareous screes: **2 – optimum**

#### 5 Vegetation of springs and mires

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

#### 8 Dry grasslands

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

#### 11 Heathlands and scrub

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

#### 12 Forests

12D Ravine forests: **1 – rare occurrence**
12E Herb-rich beech forests: **1 – rare occurrence**
12F Limestone beech forests: **1 – rare occurrence**
12O Peri-Alpidic pine forests: **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: **SC *Thlaspietea rotundifolii***

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Diagnostic taxon of alliances: **SAA *Cystopteridion*, SCA *Stipion calamagrostis***
Diagnostic taxon of associations: **SCA01 *Gymnocarpietum robertiani***

### Constant taxon

Constant taxon of associations: **SCA01 *Gymnocarpietum robertiani***

### Dominant taxon

Dominant taxon of associations: **SCA01 *Gymnocarpietum robertiani***

### Ecological specialization indices

Ecological specialization index for all vegetation types: **3.7**
Ecological specialization index for non-forest vegetation: **4**
Ecological specialization index for forest vegetation: **5.3**

## Distribution and frequency

Floristic zone: **boreal, northern temperate, southern temperate, submeridional, meridional**
Floristic region: **circumpolar**
Continentality degree: **6**
Distribution range extension along the continentality gradient: **6**
Elevational belt in the Czech Republic: **colline belt, submontane belt (montane belt)**
Occurrence frequency in the basic grid mapping cells and quadrants of the basic grid mapping cells: 327
taxon.data.freq_in_quad: 487

### 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%: **70.4 %**
Occurrence frequency in vegetation plots with a cover above 25%: **29.6 %**
Occurrence frequency in vegetation plots with a cover above 50%: **11.1 %**
Mean percentage cover in vegetation plots: **20.4 %**
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: **11**
Number of narrow habitats in which the taxon has its optimum: **2**
Number of broad habitats in which the taxon occurs: **5**
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**

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