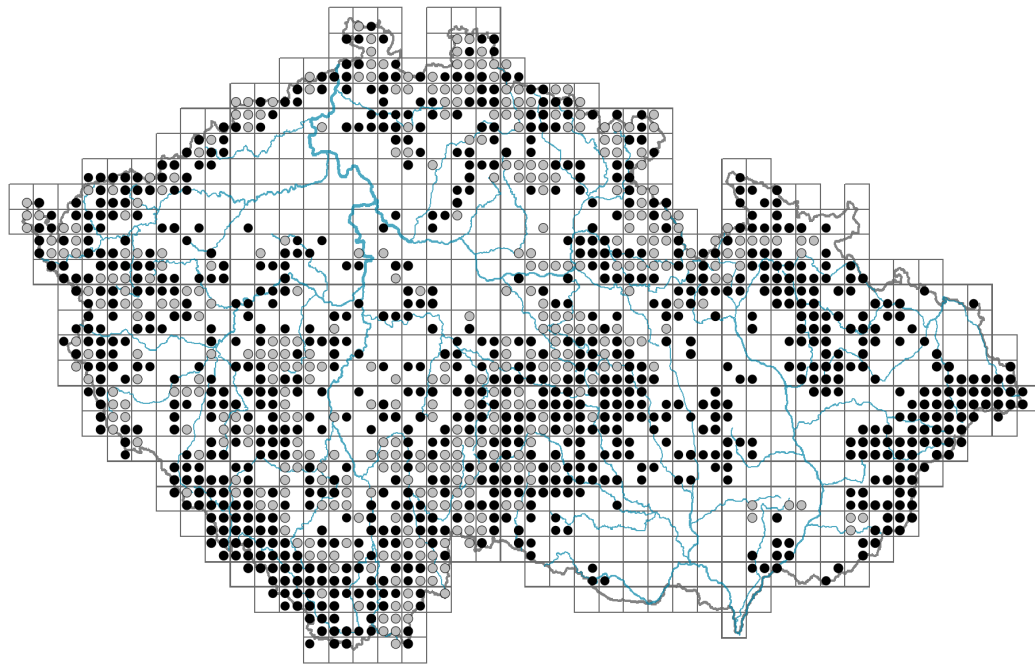


# Carex echinata

## Distribution



© Petr Kouřilský

### 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]: **0.1-0.3**

Growth form: **clonal herb**

Life form: **hemicryptophyte**

Life strategy: **CSR - competitor/stress-tolerator/ruderal**

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

Life strategy (Pierce method, C-score): **9.5 %**

Life strategy (Pierce method, S-score): **71.9 %**

Life strategy (Pierce method, R-score): **18.6 %**



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## 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: **helomorphic**



© Dana Michalová

## Flower

Flowering period [month]: **May-July**

Flowering phase: **5 Sorbus aucuparia-Galium odoratum (end of mid-spring)**  
 Flower colour: **green**  
 Perianth type: **flower achlamydeous**  
 Inflorescence type: **spica e spiculis composita**  
 Dicliny: **monoecious**  
 Generative reproduction type: **facultative allogamy**  
 Pollination syndrome: **wind-pollination**

## Fruit, seed and dispersal

Fruit type: **dry fruit - nut enclosed in an utricle**  
 Fruit colour: **brown, grey**  
 Reproduction type: **by seed/spores and vegetatively**  
 Dispersal unit (diaspore): **fruit, infrutescence or its part**  
 Dispersal strategy: **Allium (mainly autochory)**  
 Myrmecochory: **probably non-myrmecochorous**

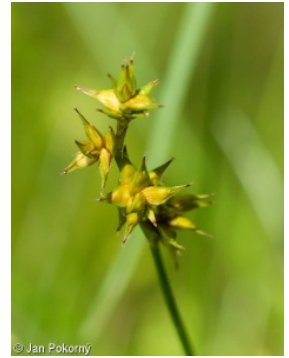
## Belowground organs and clonality

Shoot metamorphosis: **stolon, rhizome**  
 Storage organ: **stolon, rhizome, tuft**  
 Type of clonal growth organ: **epigeogenous rhizome**  
 Freely dispersible organs of clonal growth: **absent**  
 Shoot life span (cyclicity): **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]: **4**  
 Number of clonal offspring: **4.6**  
 Lateral spreading distance by clonal growth [m]: **0.04**  
 Clonal index: **4**  
 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): **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): **20**  
 Depth of the belowground bud bank (root buds excluded) [cm]: **4**  
 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): **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): **20**  
 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): **58**

Ploidy level (x): **2**

2C genome size [Mbp]: **733.25**

1Cx monoploid genome size [Mbp]: **366.63**

Genomic GC content: **36.7 %**

## 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: **5x - moderate heat indicator, occurring from lowland to montane belt, mainly in submontane-temperate areas (generalist)**

Moisture indicator value: **8 - transition between values 7 and 9**

Reaction indicator value: **3 - acidity indicator, occurring mainly in acidic conditions, exceptionally in neutral conditions**

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: **-1.03**

Herb layer disturbance frequency indicator value: **-0.66**

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

Herb layer disturbance severity indicator value: **0.19**

Whole-community structure based disturbance indicator value: **0.5**

Herb layer structure-based disturbance indicator value: **0.6**

## Habitat and sociology

Occurrence in habitats

2 Alpine and subalpine grasslands

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

4 Wetland and riverine herbaceous vegetation

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

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

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

5 Vegetation of springs and mires

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

5C Alpine and subalpine soft-water springs: **2 - optimum**

5D Calcareous fens: **2 - optimum**

5E Acidic moss-rich fens and peatland meadows: **2 - optimum**

5F Transitional mires: **2 - optimum**

5G Raised bogs: **1 - rare occurrence**

5H Wet peat soils and bog hollows: **2 - optimum**

6 Meadows and mesic pastures

6C Pastures and park grasslands: **1 - rare occurrence**

6D Alluvial meadows of lowland rivers: **1 - rare occurrence**

6E Wet Cirsium meadows: **2 - optimum**

6F Intermittently wet Molinia meadows: **2 - optimum**

6G Vegetation of wet disturbed soils: **1 - rare occurrence**

7 Acidophilous grasslands

7A Subalpine and montane acidophilous grasslands: **1 - rare occurrence**

7B Submontane Nardus grasslands: **1 - rare occurrence**

10 Saline vegetation

10J Saline steppes: **1 - rare occurrence**

11 Heathlands and scrub

11I Willow carrs: **1 - rare occurrence**

12 Forests

12A Alder carrs: **1 - rare occurrence**

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

12L Boreo-continental pine forests: **1 - rare occurrence**

12P Peatland pine forests: **1 - rare occurrence**

12Q Peatland birch forests: **2 - optimum**

12R Acidophilous spruce forests: **2 - optimum**

Affinity to the forest environment

Affinity to the forest environment in Thermophyticum: **2.2 - taxon occurring partly in the forest, but mainly in open vegetation**

Affinity to the forest environment in Mesophyticum and Oreophyticum: **2.2 - taxon occurring partly in the forest, but mainly in open vegetation**

Diagnostic taxon

Diagnostic taxon of classes: [RB Scheuchzerio palustris-Caricetea nigrae](#)

Diagnostic taxon of alliances: [RBB Sphagno warnstorffii-Tomentypnion nitentis](#), [RBC Caricion canescenti-nigrae](#), [RBD Sphagno-Caricion canescentis](#)

Diagnostic taxon of associations: [RAD02 Swertietum perennis](#), [RBA03 Valeriano simplicifoliae-Caricetum flavae](#), [RBB01 Sphagno warnstorffii-Eriophoretum latifolii](#), [RBB02 Campylio stellati-Trichophoretum alpini](#), [RBC01 Caricetum nigrae](#), [RBC04 Bartsio alpinae-Caricetum nigrae](#), [RBC05 Calliergo sarmentosi-Eriophoretum angustifolii](#), [RBD03 Carici echinatae-Sphagnetum](#), [TDF03 Angelico sylvestris-Cirsietum palustris](#)

Constant taxon

Constant taxon of classes: [RB Scheuchzerio palustris-Caricetea nigrae](#)

Constant taxon of alliances: [RBC Caricion canescenti-nigrae](#), [RBD Sphagno-Caricion canescentis](#)

Constant taxon of associations: [RAD02 Swertietum perennis](#), [RBA03 Valeriano simplicifoliae-Caricetum flavae](#), [RBB01 Sphagno warnstorffii-Eriophoretum latifolii](#), [RBB02 Campylio stellati-Trichophoretum alpini](#), [RBC01 Caricetum nigrae](#), [RBC04 Bartsio alpinae-Caricetum nigrae](#), [RBC05 Calliergo sarmentosi-Eriophoretum angustifolii](#), [RBD03 Carici echinatae-Sphagnetum](#), [TDF03 Angelico sylvestris-Cirsietum palustris](#)

Dominant taxon

Dominant taxon of associations: [RBD03 \*Carici echinatae-Sphagnetum\*](#)

## Ecological specialization indices

Ecological specialization index for all vegetation types: **5.7**

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

Ecological specialization index for forest vegetation: **5.1**

## Colonization ability

Index of colonization success (ICS): **6**

Index of colonization potential (ICP): **4**

Optimum successional age [years]: **4**

## Distribution and frequency

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

Floristic region: **circumpolar**

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

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: **529**

taxon.data.freq\_in\_quad: **1338**

## Commonness in vegetation plots from the Czech Republic

Occurrence frequency in vegetation plots: **2.3 %**

Occurrence frequency in vegetation plots with a cover above 5%: **16.7 %**

Occurrence frequency in vegetation plots with a cover above 25%: **3.5 %**

Occurrence frequency in vegetation plots with a cover above 50%: **0.9 %**

Mean percentage cover in vegetation plots: **5.1 %**

Maximum percentage cover in vegetation plots: **99 %**

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

Number of narrow habitats in which the taxon occurs: **26**

Number of narrow habitats in which the taxon has its optimum: **9**

Number of broad habitats in which the taxon occurs: **8**

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

## 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**