

## **Coefficients of Conservatism for Kansas Vascular Plants (2012) and Selected Life History Attributes**

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Coefficients of Conservatism and selected life history attributes have been assembled for native and naturalized vascular plants occurring in Kansas. Family assignments, scientific names, authors of specific epithets, and common names are those used by the staff of the R.L. McGregor Herbarium to track information about Kansas plants. Attribute values (longevity, growth habit, alien status, state rank, CoC, and wetland indicator status) have been collected from available sources and apply to the typical expression of each taxon in Kansas. Attribute codes and definitions in this document also appear at the end of the on-line table. The list is updated periodically as warranted by new data. Questions and comments about this list may be directed to the author at the indicated email address.

### **Background Information about Coefficients of Conservatism**

Floristic Quality Assessment (FQA) is a standardized tool used to estimate the floristic quality of a natural area based on the vascular plants growing there. It can be used to assess the overall ecological quality of a site and has been used by ecologists, botanists, and land managers to establish baseline assessments, to conduct long-term monitoring, and to assess restoration progress in a variety of ecological settings.

Coefficients of Conservatism (CoC) are numerical indicators of species' fidelity to native plant communities; they are the foundation of the FQA method and a prerequisite for its application in the field. Coefficients express two basic ecological tenets: plants differ in their tolerance of the type, frequency, and amplitude of anthropogenic disturbance, and plants vary in their fidelity to remnant natural plant communities. The lower a species' tolerance of human-mediated disturbance, the higher its likelihood of occurring only in a natural plant community. Low coefficient values denote species often found in highly disturbed habitats and without a strong affinity for natural plant communities. High coefficient values denote species that tolerate only limited disturbance and usually are found in natural plant communities. A CoC is an integer from 0 to 10 assigned to each native species in a given geographic region (e.g., a state). As usually applied, the species is the lowest taxonomic unit assigned a CoC value, but subspecies and varieties also may be assigned coefficients. Non-native species are not assigned coefficients because they were not part of the pre-settlement landscape. Also, naturally occurring hybrids typically are not assigned coefficients.

Coefficients of Conservatism have been assigned to native Kansas vascular plants based on their observed behavior and patterns of occurrence in Kansas plant communities. Coefficients initially were assigned by Craig C. Freeman and Caleb A. Morse of the R.L. McGregor Herbarium based on knowledge of the species, the ecological literature, and herbarium data. The draft list of coefficients was sent to 17 scientists and resource managers in Kansas for review and comment. A 4-person review panel then reviewed and discussed the input from reviewers and made adjustments based where deemed appropriate.

## Column Codes

### Longevity

A	annual
B	biennial
P	perennial
AB	annual-biennial
AP	
BP	
ABP	annual-biennial-perennial
[blank]	status not known or not yet assigned

### Growth Habit

#### Raunkiaer life form codes, assigned by KANU

C	chamaephyte (low shrubs and cushion plants with buds exposed to 25 cm above ground)
G	geophyte/cryptophyte (plants with rhizomes, tubers, or bulbs located well below the surface of the soil)
He	helophytes (water or swamp plants protruding above the water surface but with submerged winter buds)
Hm	hemicryptophyte (perennial and biennial herbs and graminoids with buds located at or near surface of soil)
Hy	hydrophytes (submerged or floating aquatic plants with winter buds at the bottom)
N	nanophanerophytes (woody plants with winter buds 10-25 cm above ground)
P	phanerophyte (trees and tall shrubs with buds at greater than 25 cm above ground)
T	therophyte (annual plants that survive unfavorable periods as seeds)
[blank]	status not known or not yet assigned

10 allowable combination categories: C/Hm, C/P, C/T, G/He, G/Hm, He/Hy, He/Hm, He/T, Hm/P, Hm/T

### Alien Status

0	native
1	casual alien (includes persisting and non-persisting casual aliens)
2	non-invasive, naturalized
3	invasive, non-transformer
4	invasive, transformer

### State Rank

S1	critically imperiled in KS; 5 or fewer occurrences
S2	imperiled in KS; 6-20 occurrences
S3	rare in KS; 21-100 occurrences
S4	apparently secure in KS; many occurrences
S5	demonstrably secure in KS
SE	exotic in KS (also gets "***" in COC column)
SH	of historical occurrence in KS, not seen in 30 years
SX	apparently extirpated in KS
SR	reported in KS but without persuasive documentation
SRF	reported falsely in KS
SU	rarity in KS unknown
?	there is some question about the rank
Q	there is a taxonomic question about the species
N	no value or not included
[blank]	status not known

**CoC** assigned by KANU staff; most hybrids do not have CoC values

N	no value
*	non-native species (no value)
0	weediest
1	>
2	>
3	>
4	>
5	intermediate
6	>
7	>
8	>
9	>
10	most conservative
hybrid	hybrid (no value)
[blank]	value not known or not yet assigned

**Wetland Indicator** USFWS Region 5 Wetland Indicator Status

OBL	obligate wetland
FACW+	>
FACW	facultative wetland
FACW-	>
FAC+	>
FAC	facultative (upland or wetland)
FAC-	>
FACU+	>
FACU	facultative upland
FACU-	>
UPL	upland
NI	insufficient information to determine status
NS	no status (no agreement, thought not to occur in region, or not examined)
[blank]	status not known