

How to Identify Species: the Golden Key

The Indiana flora consists of approximately 2700 species. So how can one tell what species one has in hand? Some excellent print publications could be consulted. However, the CMH (midwestherbaria.org) website includes a tool that should prove helpful in narrowing in on a particular species - the Golden Key.

The best way to employ the key is to approach it from one of the prepared checklists (see the Working with Species Checklists document to learn how to enter an ecoregion checklist). Alternatively, but more challenging, one could create a checklist via a Specimen Search (see the Searching the CMH Database document).

In this example, we shall use the checklist for the Bluegrass Ecoregion. Start with the Flora Projects on the home page navigation bar: Flora Projects > Indiana. On the menu of checklists find Ecoregion: Bluegrass. Note that there is a gold color key to the right of the name of the checklist. A click on it will open a page with two columns shown below.

The right hand column is a list of traits. The left hand column is the list of candidate species. As the search begins, note that the Bluegrass region has 1465 species.

Home >> Checklist: Ecoregion: Bluegrass >> Previous version of Key >> **Identification Key (new)**

Ecoregion: Bluegrass

Species Count: 1465

Acanthaceae

[Justicia americana](#)
[Ruellia caroliniensis](#)
[Ruellia humilis](#)
[Ruellia strepens](#)

Acoraceae

[Acorus calamus](#)

Adoxaceae

[Sambucus canadensis](#)
[Viburnum acerifolium](#)
[Viburnum dentatum](#)
[Viburnum molle](#)
[Viburnum prunifolium](#)
[Viburnum rufidulum](#)

Alismataceae

[Alisma subcordatum](#)

Filter/Display Options

Family/Genus Filter:

Reset

All Species

Sort by: Family/Scientific Name

- Display Common Names
 Display images:

Plant

habit

- trees
 shrubs
 vines / lianas
 herbaceous
 grass-like
 ferns & allies
 cactus-like / succulents
 aquatic & OBL wetland species

special groups

- arums
 composites
 legumes
 milkweeds
 mints

The example will follow the steps leading as close as possible to [False Rue-Anemone](#), [Enemion biternatum](#). If you are familiar with the species you will know that it is an herbaceous plant with basal and alternate, compound leaves, white flowers that only

have one whorl of color parts (i.e., sepals but not petals), numerous stamens, and multiple ovaries that form so-called follicle fruits. It blooms in spring.

As we click traits in the right column, the number of species in the left hand column decreases. Likewise, there may be additional traits that are revealed in the right column.

Clicking on the herbaceous habit box reduces the number of species to 1183. It also reveals additional traits under the label of “flower type.”

Try next to indicate that the species has compound leaves. This will reduce the number of species to 165 in the Bluegrass region.

If you wish to see the common names for the species that remain, click the “Display Common Names” box.

The selection of basal leaves limits the species list to 32 species. White as the principal flower color brings the total down to 19 species.

At this point the selection of species is few enough that viewing the gallery of photos may prove helpful. Click the “Display Images” box. Of course one could deploy this option at any point.

Ecoregion: Bluegrass

Species Count: 19

Apiaceae



Erigenia bulbosa
Harbinger-of-Spring

Brassicaceae



Cardamine angustata
Slender Toothwort



Cardamine concatenata
Cut-Leaf Toothwort



Cardamine diphylla
Crinkleroot

Filter/Display Options

Family/Genus Filter:

All Species

Reset

Sort by: Family/Scientific Name

Display Common Names

Display images:

Plant

habit

herbaceous

aquatic & OBL wetland species

longevity

annual or biennial

perennial

stature

scapose

erect or ascending; neither prostrate nor scapose

Leaves

arrangement/phyllotaxy

basal

alternate

opposite

whorled

blade division

all simple

deeply lobed or divided

some or all fully compound

Determining that there is only one whorl of perianth parts further reduces the total to 3 species, all in the Ranunculaceae or buttercup family.

Home >> Checklist: Ecoregion: Bluegrass >> Previous version of Key >> Identification Key (new version): Ecoregi

Ecoregion: Bluegrass

Species Count: 3

Ranunculaceae



Anemone quinquefolia
Nightcaps



Anemone virginiana
Tall Thimbleweed



Enemion biternatum
Eastern False Rue-Anemone

Filter/Display Options

Family/Genus Filter:

All Species

Sort by:

Display Common Names

Display images:

Plant

habit

herbaceous

Leaves

arrangement/phyllotaxy ?

basal

opposite

blade division ?

some or all fully compound

Inflorescence

flowering season - upper Midwest

spring

summer

Flower

principal flower color ?

white or cream

To ultimately end with only *Enemion biternatum*, observe that the flowers mostly have 4 ovaries or give rise to a cluster of 4 fruits.

While the Golden Key may not always end with a single species, it should aid in reducing the number of choices to investigate further through the CMH Species pages or print references.

One final note, perhaps there were unfamiliar terms used in the Golden Key. We hope that in the near future there will be quick links to an illustrated glossary. The glossary words will be indicated by the letter “i” in a green disk.