

Woodland Wildflowers of Illinois

Eco-Meet Study Guide

Helpful Hints:

This study guide will focus on woodland wildflowers of Illinois. The Eco-Meet test may consist of multiple choice, true/false, fill in the blank, matching, label a diagram, short answer, or identification using pictures, live plants, etc. Anything in this study guide has the potential to be on the test. Pay close attention to words in bold, diagrams, and charts – it's easy to pull questions from that information.

Welcome to Wildflowers

A basic definition for **wildflowers** is any wild flowering plant without a woody stem. In the United States alone, over 22,000 species of wildflowers have been identified. Of those, only a few thousand are native to Illinois. In Illinois, wildflowers are found in prairies, wetlands, and woodlands. They can grow on river banks, sand dunes, rock walls, and many other habitats. Wildflowers that have existed in a location for a long time (centuries) without human influence are considered **native** species. Any flower, wild or cultivated, that is introduced to a location by human activity is considered a **non-native** (or alien) species. **This study guide will focus specifically on a handful of woodland wildflowers native to Illinois.**

All **cultivated** (non-wild) flowers are descendants of flowers that grew wild somewhere, sometime. For instance, elegant rose bushes in English gardens were bred over centuries from wild rose plants found in meadows and fields. But it should be remembered that not all wildflowers are necessarily beautiful, or sweet smelling! For example, the **Skunk Cabbage** of northern Illinois looks (and smells!) like rotting meat, to attract the carrion flies that pollinate it.



Skunk Cabbage
Symplocarpus foetidus

Within a woodland, low-growing wildflowers have limited options for obtaining enough light to survive. Most have had to adapt to deal with the difficulty of getting light. They may absorb unique colors of light (like the red leaves of the **Liverwort** wildflower, that absorb green light) or adapt to get food in a way independent of sunlight (like the pale **Indian Pipe** flower that gets its food from underground fungi). Many woodland wildflowers, however, are ephemerals. **Ephemeral** wildflowers race against time each spring. They must sprout, grow, flower, fruit, and seed in the early months of spring before the tree leaves come out and block the sunlight. Forest floors in March-May are often carpeted in these ephemeral wildflowers, which will then die back from the surface entirely for the rest of the year.

Names & Classifications

Though most people will refer to a plant by its **common name**, every recorded plant and animal also has a **scientific name**. While common names are often the best way to discuss plants with a neighbor or friend, they can sometimes cause confusion. For example, the word “corn” refers to entirely different plants depending on what country you are in.

United States	England	Scotland
 <p data-bbox="279 726 495 751">“Corn” refers to maize</p>	 <p data-bbox="701 726 924 751">“Corn” refers to wheat</p>	 <p data-bbox="1136 720 1336 745">“Corn” refers to oats</p>

Scientific names, in contrast, are the same in every country. These names are in Latin so that they do not have to be translated from one language to another. People from across the planet can discuss a plant and know they are talking about the same plant by using its scientific name.

Scientific names are written in **binomial nomenclature**, which means “two-part naming.” The first part is the genus, the second part is the species. No two species have the same pair of names. Scientific names are written in italics, with the genus capitalized and the species in lowercase. For example: *Sanguinaria canadensis* (bloodroot). If you are writing a scientific name by hand, you can underline it instead of italicizing. For example: Sanguinaria canadensis (bloodroot).

How to Look at Wildflowers

Yes you know how to admire wildflowers, but do you really know how to *look* at them? Imagine you just walked into the woodland and viewed a lovely wildflower you did not know the name of. But when you get home and pull out your “Wildflower Identification” book to look up what you saw, you realize you didn’t really see the wildflower at all! That is, you didn’t note the right details of the plant. When identifying wild plants or animals, naturalists must first learn what field marks to notice. **Field marks** are specific details about the plant that are the most useful for identifying it later.

When viewing wildflowers, ask yourself the following questions. Bring a camera or notebook and pencil to record details you may forget.

- How many petals does the flowers have?
- What color are the petals?
- How are the flowers arranged on the plant?
- What do the flowers smell like?
- Do you see seeds? What do they look like?
- What shape are the plant’s leaves?
- Are the leaves smooth and waxy or covered with tiny hairs?
- Is there one leaf per stem, or many?
- Are the leaf edges smooth, jagged, or spread like fingers?

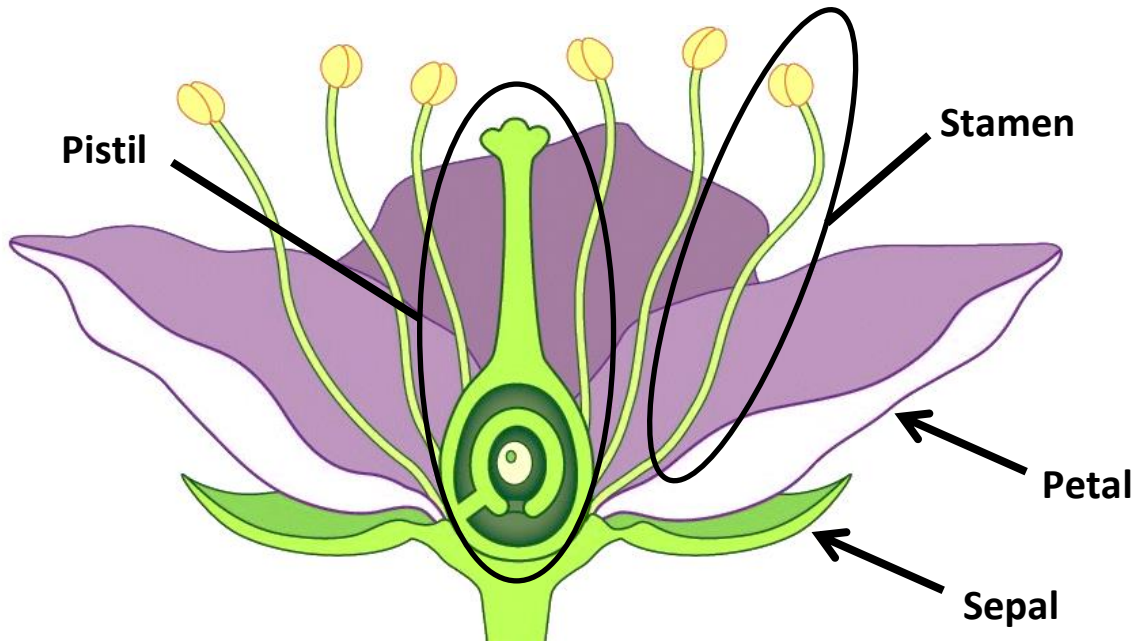
To develop a keen understanding of field marks, it helps to learn a few botanical terms. Two diagrams will be included in this study guide to help you learn terms. Reference wildflower books or the internet to find more diagrams that will help you learn the correct terms for everything from flower shapes to leaf margins and root structures.

[You will not be tested on terms that are not included in the study guide. However, learning additional terms will increase your overall understanding of plant identification.]

Terms: The Flower

Know the basic anatomy of a flower. Most flowers have male (**stamen**) and female (**pistil**) parts. The goal of every flower is to become fertilized so it may produce seeds. Many flowers require assistance from insects, birds, bats, water, or wind in order to be pollinated and fertilized so they can produce seeds.

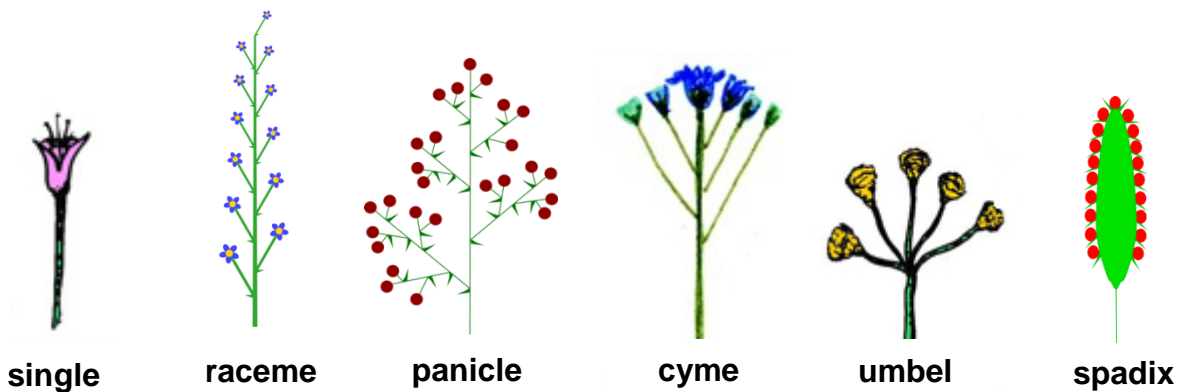
[You will want to be able to label these four parts of the flower.]



Terms: The Inflorescence

A group of flowers on a plant is referred to as an **inflorescence**. The way the flowers are arranged can give you clues to the identity of the plant. There are many types of inflorescences. Here, we will learn just six.

[You will want to know these six arrangements and terms.]



The Value of Wildflowers

The value of wildflowers goes beyond their beauty. While many of the blooms are beautiful or fragrant, the plants provide many additional benefits to humans. Like most plants, wildflowers produce oxygen, serve as food for wildlife, and are a source of biodiversity on our planet.

Here are just a few specific ways humans have benefitted from wildflowers:

- **Bloodroot** rhizomes contain a red juice that was used by Native Americans as a dye for clothing and skin.
- **Toothwort** rhizomes have a radish flavor that can be used in salads or as seasoning.
- **Mayapple** fruits are edible and can be used to make jelly. Modern medicine is investigating the **mayapple** for use in treating certain warts and cancers.
- **Spring beauty's** tuberous roots may be boiled, salted, and eaten. The young leaves can be used in salads.
- **Wild ginger** rhizomes (part of the roots) can be used as a substitute for ginger.
- **Jack-in-the-pulpit** corms (part of the roots) can be cooked and used to make a flour-like substance for baking bread.
- **Rue anemone** root tubers were harvested by Native Americans and pioneers, who referred to them as "wild potato."
- **Shooting star** flowers buds can be pickled and eaten. Their blossoms can be used to make wine.

It is important to note, however, that many species of wildflower are poisonous to ingest. Others have thorns or stinging hairs on their stems. Always use caution when handling an unidentified plant. Never eat any part of a wild plant unless you are certain of its safety.



FAST FACT: The **common blue violet** (*Viola sororia*) is Illinois's state flower.

Don't Let them Disappear!

Illinois lists 251 species of state endangered plants, and 73 species of state threatened plants. Because wildflowers tend to be so delicate and sensitive, it is easy for humans to disrupt their ability to survive. Where wild areas are developed or disturbed by humans, native wildflowers quickly disappear.

We can all do our part to protect Illinois wildflowers. Do not pick the flowers. Admire them, photograph them, and sketch them, but leave them on the plant so they can grow and produce seeds.

Protect natural areas where wildflowers still grow. Try not to disturb these areas with new building projects or heavy foot traffic.

Plant native wildflowers. Some species of Illinois wildflowers can be easily grown in your garden or around your home! When you plant native plants, you are helping not only those plant species but also the Illinois wildlife that depend on them. Check local gardening stores or go online to purchase Illinois wildflower seeds and seedlings.



Wildflowers in Danger:

- Some wildflowers are hurt by their own stunning beauty. **Showy lady's slippers** are a state endangered species due to over-picking.
- **Ginseng** plants are increasingly hard to find, as people continue to dig them up (often illegally) to sell the valuable roots, which are used in energy drinks.
- A very rare variety of phlox, **Sangamon Phlox**, grows wild in only one location in the world. It is found on the banks of the Sangamon river, in Sangamon and Champaign counties, Illinois.
- **Goldenseal** plants are disappearing from woodlands because people are overharvesting the plants. Goldenseal roots are valued for use in herbal medicines.








Wildflower Identification




[Do your best to learn to recognize the following 25 species of wildflowers. All are species native to Illinois woodlands. You will be allowed to identify each by its FULL common name (all parts of the common name must be included). You do NOT have to memorize the scientific names.]




You will not need to memorize the details of each description – just be able to identify the plant with flower. You will, however, want to know which ones are ephemeral and which ones are endangered species. This may be on the test.




If you are not able to print this study guide in color, you will need study color photographs of these wildflowers via other resources. We recommend a wildflower identification book, or www.illinoiswildflowers.info.]




Wildflower	Description	Photo [from www.uswildflowers.com & www.illinoisflowers.info .]
<p>1</p> <p>Bloodroot</p> <p><i>Sanguinaria canadensis</i></p>	<p>Number of Petals: 8-16</p> <p>Petal Color: white</p> <p>Inflorescence: single</p> <p>*Ephemeral plant</p> <p>Notes: Broad leaves have 5-9 major lobes and several minor lobes. Flowers bloom for only 1-2 days.</p>	
<p>2</p> <p>Shooting Star</p> <p><i>Dodecatheon meadia</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: white or pink</p> <p>Inflorescence: umbel</p> <p>*Ephemeral plant</p> <p>Notes: This stunningly beautiful flower can grow in woodlands or prairies.</p>	




<p>3</p> <p>Common Blue Violet</p> <p><i>Viola sororia</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: medium to dark violet</p> <p>Inflorescence: single</p> <p>Notes: The lowest petal functions as a landing pad for insects. This is Illinois' state flower.</p>	
<p>4</p> <p>Dutchman's Breeches</p> <p><i>Dicentra cucullaria</i></p>	<p>Number of Petals: 4 <i>(but unusually shaped)</i></p> <p>Petal Color: white</p> <p>Inflorescence: raceme</p> <p>*Ephemeral plant</p> <p>Notes: The flowers resemble upside-down breeches, giving this plant its name. They typically grown only in woodlands that have never had their soil disturbed by a bulldozer.</p>	
<p>5</p> <p>False Rue Anemone</p> <p><i>Enemion biternatum</i></p>	<p>Number of Petals: 0 <i>(but 5 petal-like sepals)</i></p> <p>Petal Color: <i>(sepals are white)</i></p> <p>Inflorescence: single or umbel</p> <p>Notes: The similar looking Wood Anemone and Rue Anemone can have 4-7 sepals while False Rue Anemone has only 5.</p>	




<p>6</p> <p>False Solomon's Seal</p> <p><i>Smilacina racemosa</i></p>	<p>Number of Petals: 6</p> <p>Petal Color: white</p> <p>Inflorescence: panicle</p> <p>Notes: This plant is closely related to another species, Solomon's Seal. The inflorescence is the best way to tell them apart.</p>	
<p>7</p> <p>Goldenseal</p> <p><i>Hydrastis canadensis</i></p>	<p>Number of Petals: 0 <i>(but 3 petal-like sepals)</i></p> <p>Petal Color: greenish-white</p> <p>Inflorescence: single</p> <p>Notes: These plants have large, 5-fingered leaves. They are becoming uncommon due to over-harvesting by humans.</p>	
<p>8</p> <p>Jack-in-the-Pulpit</p> <p><i>Arisaema triphyllum</i></p>	<p>Number of Petals: 0 <i>(tiny flowers are not very visible to the naked eye)</i></p> <p>Petal Color: none</p> <p>Inflorescence: spadix</p> <p>Notes: This plant has a very unusual form. The flower spadix is known as the "jack" and the special leaf that curls around it and over it is the "pulpit."</p>	



<p>9</p> <p>Jacob's Ladder</p> <p><i>Polemonium reptans</i></p>	<p>Number of Petals: 5</p> <p>Petal Color:</p> <p>Inflorescence: panicle</p> <p>Notes: This plant has distinct compound leaves, with leaflets arranged opposite one another (resembling a ladder).</p>	
<p>10</p> <p>Mayapple</p> <p><i>Podophyllum peltatum</i></p>	<p>Number of Petals: 6-9</p> <p>Petal Color: white</p> <p>Inflorescence: single</p> <p>Notes: The enormous leaves of this plant are round, nearly 1 foot in diameter, with deep lobes. The flower (and later, fruit) are hidden below the leaf.</p>	
<p>11</p> <p>Prairie Trillium</p> <p><i>Trillium recurvatum</i></p>	<p>Number of Petals: 3</p> <p>Petal Color: maroon</p> <p>Inflorescence: single</p> <p>*Ephemeral plant</p> <p>Notes: Trilliums are slow growing, and may require 10 years in the wild before being mature enough to flower. Despite their common name, Prairie Trillium are usually found in woodlands.</p>	

<p>12</p> <p>Liverwort</p> <p><i>Hepatica nobilis</i></p>	<p>Number of Petals: 0 (but 5-11 petal-like sepals)</p> <p>Petal Color: white, pastel-pink, or pastel-blue</p> <p>Inflorescence: single</p> <p>*Ephemeral plant</p> <p>Notes: The 3-lobed leaves of this plant are sometimes a reddish color, allowing the woodland wildflower to absorb green light that other plants reflect.</p>	
<p>13</p> <p>Solomon's Seal</p> <p><i>Polygonatum commutatum</i></p>	<p>Number of Petals: (petals are fused together into a tube)</p> <p>Petal Color: white</p> <p>Inflorescence: umbel</p> <p>Notes: It is easy to confuse the leaves of this plant with its close relative, False Solomon Seal. The inflorescences are the best way to tell them apart.</p>	
<p>14</p> <p>Spring Beauty</p> <p><i>Claytonia virginica</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: white with pink stripes</p> <p>Inflorescence: raceme</p> <p>*Ephemeral plant</p> <p>Notes: This wildflower is still common throughout Illinois. It can survive more environmental disruption than most wildflowers.</p>	

<p>15</p> <p>Swamp Buttercup</p> <p><i>Ranunculus septentrionalis</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: yellow</p> <p>Inflorescence: single</p> <p>Notes: Though there are several species of wild buttercup in Illinois, the Swamp Buttercup is the most common.</p>	
<p>16</p> <p>Virginia bluebells</p> <p><i>Mertensia virginica</i></p>	<p>Number of Petals: (<i>petals are fused together into a tube</i>)</p> <p>Petal Color: light blue</p> <p>Inflorescence: cyme</p> <p>*Ephemeral plant</p> <p>Notes:</p>	
<p>17</p> <p>White Trout Lilly</p> <p><i>Erythronium albidum</i></p>	<p>Number of Petals: 6</p> <p>Petal Color: white</p> <p>Inflorescence: single</p> <p>*Ephemeral plant</p> <p>Notes: The top surface of each leaf is mottled pale green and brownish. This pattern might remind you of the speckled scales of a trout fish.</p>	

<p>18</p> <p>Wild Columbine</p> <p><i>Aquilegia canadensis</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: red, turning yellow at the tips</p> <p>Inflorescence: cyme</p> <p>Notes: The wild columbine is an example of a wildflower that has been cultivated by humans. Wild columbine always has red blooms, but cultivated varieties can have other colors such as blue, purple, yellow, or white.</p>	
<p>19</p> <p>Wild Geranium</p> <p><i>Geranium maculatum</i></p>	<p>Number of Petals: 5</p> <p>Petal Color: purplish pink</p> <p>Inflorescence: single or umbel</p> <p>Notes: This common woodland wildflower blooms for a full month in early summer. They often form colonies (many plants together) in the woods.</p>	
<p>20</p> <p>Wild Ginger</p> <p><i>Asarum canadense</i></p>	<p>Number of Petals: (<i>petals are fused together into a tube</i>)</p> <p>Petal Color: reddish brown</p> <p>Inflorescence: single</p> <p>Notes: This fascinating plant produced flowers that lay on the ground, are dark colored, and smell rotten. These features attract ants, beetles, and flies to enter and pollinate the blooms.</p>	

<p>21</p> <p>Wild Hyacinth</p> <p><i>Camassia scilloides</i></p>	<p>Number of Petals: 6</p> <p>Petal Color: light blue-violet or nearly white</p> <p>Inflorescence: raceme</p> <p>*Illinois Endangered Species</p> <p>*Ephemeral plant</p> <p>Notes: This species is usually only found in very high-quality, moist habitats.</p>	
<p>22</p> <p>Wood Orchid</p> <p><i>Platanthera clavellata</i></p>	<p>Number of Petals: 3 <i>(plus 3 greenish sepals)</i></p> <p>Petal Color: greenish-white</p> <p>Inflorescence: raceme</p> <p>*Illinois Endangered Species</p> <p>Notes: This plant is disappearing in Illinois due to habitat destruction. I usually does not survive being transplanted.</p>	
<p>23</p> <p>Woodland Phlox</p> <p><i>Phlox divaricata</i></p>	<p>Number of Petals: 5 <i>(fused at base)</i></p> <p>Petal Color: light blue, violet, or white</p> <p>Inflorescence: cyme</p> <p>Notes: There are several species and subspecies of phlox native to Illinois, and they can be hard to tell apart. Simply calling the plant “phlox” is usually safest.</p>	

<p>24</p> <p>Yellow Bellwort</p> <p><i>Uvularia grandiflora</i></p>	<p>Number of Petals: 6</p> <p>Petal Color: yellow</p> <p>Inflorescence: single</p> <p>*Ephemeral plant</p> <p>Notes: The flowers on this plant are long and droop down, like a bell. The flowers appear slightly twisted.</p>	
<p>25</p> <p>Yellow Lady's Slipper</p> <p><i>Cypripedium parviflorum</i></p>	<p>Number of Petals: 3</p> <p>Petal Color: Two are purplish-brown and hang like shoestrings. One is yellow and forms the slipper.</p> <p>Inflorescence: single</p> <p>*Illinois Endangered Species</p> <p>*Ephemeral plant</p> <p>Notes: This wild orchid flower is stunningly beautiful and noticeable. It is disappearing throughout the United States.</p>	

**“Woodland Wildflowers of Illinois”
2015 Eco-Meet Study Guide**

Online Sources:

“Wildflowers” by University of Illinois Extension
<http://extension.illinois.edu/wildflowers/directory.cfm>

“Checklist of Illinois Endangered and Threatened Animals and Plants”
by the Illinois Endangered Species Protection Board
[http://www.dnr.illinois.gov/ESPB/Documents/2015 ChecklistFINAL for webpage 051915.pdf](http://www.dnr.illinois.gov/ESPB/Documents/2015%20ChecklistFINAL%20for%20webpage%20051915.pdf)

“Illinois Wildflowers” by Dr. John Hilty
<http://www.illinoiswildflowers.info/>

“Illinois Native Plant Society”
<http://www.ill-inps.org/>

“US Wildflower’s Database of Wildflowers for Illinois” by Gerry Williamson
<https://uswildflowers.com/wfquery.php?State=IL>

Book Sources:

Runkel, Sylvan T., and Alvin F. Bull. *Wildflowers of Illinois Woodlands*. Des Moines, IA: Wallace Homestead Book, 1979.

Peterson, Roger Tory. *Peterson First Guide to Wildflowers of Northeastern and North-central North America*. Boston: Houghton Mifflin, 1986.

Hood, Susan. *National Audubon Society First Field Guide to Wildflowers*. New York: Scholastic, 1998.

Thieret, John W., William A. Niering, and Nancy C. Olmstead. *National Audubon Society Field Guide to North American Wildflowers: Eastern Region*. New York: Alfred A. Knopf, 2001.