

# St. Joe State Park (Harris Branch)

March 18, 2024

	<b>BOTANICAL NAME</b> (with <a href="#">etymology</a> & genus pronunciation)	<b>FAMILY</b> [CC] = <a href="#">Coefficient of Conservatism</a>	<b>COMMON NAME</b> (with tips we learned)
<input type="checkbox"/>	<a href="#">Cardamine concatenata</a> (kar-DAM-ih-nee)	Brassicaceae [CC4]	Toothwort (perennial with underground toothlike storage tuber / Flowers: 4 large [for a mustard] whitish petals form an “X”, with several flowers clustered into a terminal raceme, compact at first, then elongating / Basal Leaves: only on non-flowering plants because they are collecting energy for next year’s flower / Stem Leaves: often 3 leaves (with long petioles) in a whorl at least halfway up the stem, with each leaf palmately dissected into 3 toothy lobes (often looking like 5 toothy lobes when the leaves are deeply divided – somewhat resembling a marijuana leaf) / habitat: rich woods / lookalikes: flower resembles our native <i>Cardamine bulbosa</i> , but the leaves are completely different.)
<input type="checkbox"/>	<a href="#">Cercis canadensis</a> (= weaver’s shuttle [shape of seedpod]) (SIR-siss)	Fabaceae (Caesalpinoideae subfam) [CC3]	Redbud (seedpods grow from trunk and main branches [cauliflory] as does chocolate [from the mallow family] / each leaf has 2 pulvini for movement, one on each end of the petiole)
<input type="checkbox"/>	<a href="#">Glandularia canadensis</a> (gland-tipped hairs of calyces?) (gland-yoo-LAYR-ee-uh)	Verbenaceae [CC5]	Rose Verbena (flowers: in terminal clusters / 5 purple petals with notched tips / not quite actinomorphic / leaves opposite, deeply cut into an attractive treelike shape)
<input type="checkbox"/>	<a href="#">Lamium amplexicaule</a> (mint + around the stem) (LAY-mee-um)	Lamiaceae [intro]	Henbit (leaves: opposite, scalloped, a pair appears to encircle the stem / no petiole because the hen bit it off / flower: pink, tiny, in axillary clusters, 2-lipped with upper lip hairy)
<input type="checkbox"/>	<a href="#">Leavenworthia uniflora</a> () (leven-WRTH-ee-uh)	Brassicaceae [CC7]	One-Flowered Gladecress (divided leaves of its basal rosette have unusually-shaped, somewhat pentagonal terminal lobes)
<input type="checkbox"/>	<a href="#">Lithospermum canescens</a> (stone-seed + gray-haired) (lith-o-SPR-mum)	Boraginaceae [CC6]	Orange (or Hoary) Puccoon (perennial / leaves alternate, sessile, oblong / stems densely hairy / flowers distylous – some with long hatpin-like styles and short stamens, others with short styles and higher-placed stamens / flower color varies from deep orange to yellow / famously difficult to grow from seed because of mycorrhizal dependence)
<input type="checkbox"/>	<a href="#">Noccaea perfoliata</a> (botanist’s name + through the leaf) (synonyms: <i>Thlaspi perfoliatum</i> and <i>Microthlaspi perfoliatum</i> ) (NOCK-ee-uh)	Brassicaceae [intro]	Perfoliate Pennycress (leaves: alternate / clasp stem with their auricles [not truly perfoliate] / fruits are “silicles” that look like ping-pong paddles, though not as large as the paddles of our Field Pennycress [ <i>Thlaspi arvense</i> ] /
<input type="checkbox"/>	<a href="#">Nothoscordum bivalve</a> (false + garlic + 2 bud scales) (no-tho-SKOR-dum)	Amaryllidaceae [CC4]	False Garlic (looks like an <i>Allium</i> , but with a sweet rather than a garlicky or oniony smell / flowers with 6 free tepals, 6 stamens, 1 style with a somewhat 3-lobed stigma)
<input type="checkbox"/>	<a href="#">Prunus americana</a> (PROO-nus)	Rosaceae [CC4]	Wild Plum (Flower: white, 5 petals, different from Callery Pear in at least 4 ways: plum blossoms solitary or in small clusters [pear blossoms in dense snowball clusters] / plum anthers yellow [pear anthers purple] / plum stamens longer than petals [pear stamens shorter than petals] / plum blossoms smell sweet for attracting bees [pear blossoms smell putrid for attracting flies])
<input type="checkbox"/>	<a href="#">Rhus aromatica</a> (= fragrant) (ROOS)	Anacardiaceae [CC4]	Fragrant Sumac (dioecious, but maybe in transition with some opposite-sex or bisexual flowers in the mix / flowers emerge from catkin-like, dark-scaled, flower-bud clusters that were formed in previous summer / has 3 blobs at its very center from short 3-lobed style with a conspicuous stigma at tip of each lobe / male flowers have 5 short stamens that encircle the gynoecium)

☐	<a href="#"><i>Sabulina michauxii</i></a> (sandy + botanist's name) / synonyms: <i>Minuartia michauxii</i> and <i>Arenaria stricta</i> (sab-yoo-LY-nuh / mish-SHOW-ee-eye)	Caryophyllaceae [CC9]	Rock Sandwort / Stiff Sandwort / (leaves: needle-like, dense lower on stem, absent higher on stem / habitat: limestone glades, rocky soils / attractive)
☐	<a href="#"><i>Thalictrum thalictroides</i></a> (meadow rue + resembling <i>Thalictrum</i> ) (thuh-LICK-trum)	Ranunculaceae [CC5]	Rue Anemone (This is the so-called "True Rue" which is often confused with the "False Rue" ( <i>Enemion biternatum</i> ): <i>Thalictrum</i> often has more than 5 petals ( <i>Enemion</i> has only 5), <i>Thalictrum</i> often has pinkish petals [actually petaloid sepals] ( <i>Enemion</i> only has white), <i>Thalictrum</i> prefers a drier upland habitat ( <i>Enemion</i> prefers a moist lowland), <i>Thalictrum</i> is solitary or grows in small groups ( <i>Enemion</i> , often grows in large groups), <i>Thalictrum</i> 's leaflets have short lobes – like kitten paws ( <i>Enemion</i> 's leaflets have longer fingerlike lobes)
☐	<a href="#"><i>Viburnum rufidulum</i></a> (= to tie [maybe referring to the pliancy of the twigs] + reddish) (vy-BURR-num)	Adoxaceae [CC4]	Rusty Blackhaw (opposite arrangement / leaves leathery / short stubby twigs at almost right angles to main stems / buds scales and leaf petioles velvety with dark rusty color (in contrast to <i>V. prunifolium</i> which does not have rust-colored hairs) / flowers in large white snowball inflorescences)

## NOTES

**WHERE WE WALKED:** We met at St. Joe State Park's "Harris Branch Trailhead". (The name "Harris Branch" comes from the nearby Harris Branch stream – a tributary of the Flat River.) We walked northward along the so-called "Paved Bicycle Trail", leaving the trail a couple of times to explore some glade-like areas on the right (including the "Cokebottle Glade"). The "Paved Bicycle Trail" is an 11-mile loop, but we only walked a half mile or so to a bend in the trail at a 2<sup>nd</sup> power-line cut (where we explored a rocky washed-out hill on the left).

**FLOWERS FOUND:** Our purpose for driving all the way to St. Joe State Park was to look for flowers. We were hoping to find an extra-large trove of them to make up for last week's slim pickin's at Cuivre River.

Although not exactly a trove, we did find a dozen different flowers. We probably would have found more if the weather wasn't so cold. The temperature had been in the 20's overnight and was barely in the 30's during our walk. So it wasn't optimal weather for the flowers or for us.

Here are the 12 flowers that we found – presented in the order in which we found them:

[\*Noccaea perfoliata\*](#): (NOCK-ee-uh) The first flower we found was...*Ugh!* Not another small, white-flowered Brassica! Yes, and to make things even more confusing, this one has at least 3 different botanical names. John warned us about this. *Noccaea perfoliata* seems to be its currently favored name (according to [Plants of the World Online](#)). The other names "*Microthlaspi perfoliatum*" and "*Thlaspi perfoliatum*" are listed as synonyms of *Noccaea*.

The Pennycresses (*Noccaea*) are quite different from the Bittercresses (*Cardamine*) that we found in previous weeks. Most noticeably, the *Noccaea* fruits look like ping-pong paddles (silicles) instead of *Cardamine*'s long, pencil-like siliques. The mnemonic "**Ping-Pong Pennycress**" can be helpful, but we have to keep in mind that St. Louis has another Pennycress (*Thlaspi arvense*) that has much larger ping-pong paddles – almost penny-sized! (Actually, we have lots of ping-pong players among the 46 St. Louis mustard family members. Here's the family [LIST](#). We can check-out each one to see if it grows a ping-pong paddle.)

Although its species epithet is "*perfoliata*", the leaves aren't truly perfoliate. They just clasp the flower stem with their long ears (auricles). The truly perfoliate leaves that we're familiar with (like *Eupatorium perfoliatum*, *Silphium perfoliatum*, or *Triosteum perfoliatum*) appear on plants with an "opposite" leaf arrangement. *Noccaea* has an "alternate" leaf arrangement.

[\*Lamium amplexicaule\*](#): Henbit. Its species epithet "*amplexicaule*" (= around the stem) is wonderfully useful for identification. The sessile leaves seem to wrap around the stem. There are no petioles because the hen bit them off. There are 3 similar-looking mints (the "Three Mintkateers") that often appear together in early spring to confuse us. The other 2 mints are Ground Ivy [Creeping Charlie] ([\*Glechoma hederacea\*](#)) and Purple Deadnettle ([\*Lamium purpureum\*](#)). It's surprising that the famous "Lamiaceae" (Mint Family) gets its name from such seemingly insignificant *Lamium*-genus plants.

[\*Prunus americana\*](#): The next flowers we found were on a small plum tree that was full of white blossoms. Or was it the dreaded pear tree? How can our native plum blossoms be distinguished from Callery Pear (*Pyrus calleryana*) blossoms? Compare Steve Turner's [PLUM](#) photos to his [PEAR](#) photos.

1. The plum blossoms are solitary or in small clusters. The Callery Pear blossoms are in dense snowball clusters.
2. The plum (and crabapple and service berry) anthers are yellow. The Callery Pear's anthers are purple.
3. The plum's stamens are longer than its petals. The Callery Pear's stamens are shorter than its petals.
4. The plum's 5 petals have rounded tips. The Callery Pear's 5 petals are notched. (At least this seems true when comparing Steve's photos; please check elsewhere to confirm that this is a consistent trait difference.)
5. The plum blossoms smell sweet (for attracting bees). The Callery Pear blossoms smell like a dead animal (for attracting flies).

[\*Cercis canadensis\*](#): The redbuds are starting to bloom! That means the Flowering Dogwoods (Missouri's State Tree) will soon be blooming too. (The redbud flowers are edible – and sweet!)

[\*Rhus aromatica\*](#): The 5<sup>th</sup> flower that we found was Aromatic Sumac. Or was it Spicebush (*Lindera benzoin*)? Both have yellow clusters of flowers on leafless shrubs. Of course we could easily scratch-and-sniff their twigs, but that would be cheating. The challenge is to differentiate them by their flowers alone. This is complicated by the fact that they're both more-or-less dioecious (Spicebush being "more" and Aromatic Sumac being "less" because it seems to be in a transitional phase with some bisexual flowers in the mix). Since they both have different male and female flowers, we actually have to deal with 4 or 5 flowers instead of 2.

Compare Steve Turner's [RHUS](#) photos to his [LINDERA](#) photos.

1. The sumac flowers emerge from dark-scaled, catkin-like, very distinctive flower-bud clusters that were formed at the end of the previous summer. It's possible to look through the flowers to see this underlying dark-scaled structure at the base of the flowers, making identification easy.
2. The sumac flower has 3 easy-to-see blobs at its very center (from a short, 3-lobed style with a conspicuous stigma at the tip of each lobe). In contrast, the Spicebush has a single, long style topped with a white, asymmetrical, somewhat 2-lobed stigma.
3. The spicy Spicebush has 9 wildly exuberant stamens. Each stamen has 2 anthers that emerge like twins from openings at the end of each filament (as shown in the labeled photo [HERE](#)). To make things even wilder, the 3 innermost stamens have nectar glands at their base. In contrast, the male sumac flowers have 5 short, orderly, unassuming stamens that encircle the gynoecium like little soldiers.

[\*Glandularia canadensis\*](#): Rose verbena. What's not to like about this cheerful plant? We saw quite a few of them in full flower. St. Louis has 7 members from the Verbenaceae (list [HERE](#)), but most won't be showing their flowers until much later in the season.

[\*Leavenworthia uniflora\*](#): The 7<sup>th</sup> flower that we found was... *Oh!* You've got to be kidding me! Yet another small, white-flowered Brassica? How in the world can we possibly remember all of these? Actually, this one's not too bad. In fact John took quite a few photos of it and said that he really likes this plant. The leaves in its basal rosette have weirdly-shaped terminal lobes (John called them "pentagonal"). They're rather easy to identify. Although it wasn't yet in flower, we'll count it anyway out of sympathy. A pile of privet branches had been dumped on its tiny habitat, so its siblings were probably all lost.

[\*Lithospermum canescens\*](#): It was a happy surprise to find an Orange Puccoon [aka "Hoary Puccoon"]. Ours was a deep pumpkin orange. Deb observed that hers at home was more of a yellow color. Later we found a yellow one like Deb's, so there must be variation in color. I've read that these are hard to grow at home. First of all they have "Pin and Thrum" flowers. ("Pin" flowers have a tall, female, hatpin-like style with male stamens that are down low in the floral tube. "Thrum" flowers are the opposite with a short female style and male stamens that are higher in the floral tube). Secondly, they produce very few viable seeds. Thirdly (and worst of all) they depend on a certain type of mycorrhizal fungi (which our gardens may or may not have).

[\*Thalictrum thalictroides\*](#): This was a surprise. There was only one – and it was right next to the trail waiting to make its cameo appearance. It's easy to confuse the "Rue Anemone" (this one) with the "False Rue Anemone" (*Enemion biternatum* - which we saw at St. Francois S.P.). To help remember which is which, you might want to read the goofy [DEBATE BETWEEN "TRUE RUE" AND "MR. FIVE"](#) hosted by *Claytonia*, the Spring Beauty herself.

*Viburnum rufidulum*: John pointed-out how the rusty bud scales (that we depend on for identification) were being pushed aside by the emerging flower (which will turn-out to be a huge snowball inflorescence).

*Nothoscordum bivalve*: Sebastian found this Allium-lookalike next to the trail. Even though Fr. Sullivan might not be thrilled that one of its common names is “False Garlic”, it makes sense because it looks like an Allium but it doesn’t have a garlicky or oniony smell (and the flower is even said to have a sweet smell!). Besides, it’s better than its other common name “Crow Poison” which suggests that the plant is toxic even though there seems to be no supporting evidence. The power of names!

*Cardamine concatenata*: Finally – a Toothwort with an open flower! We’ve seen this plant in bud on previous walks. We’re lucky to have found this rather common (but still appreciated) spring ephemeral in flower on such a frigid day.

#### SHORT OBSERVATIONS:

- As we walked from the parking area, we noticed an official-looking sign “Stellata Natural Area”. It was placed in a rather small lawn in front of the restroom (a restroom that many complained was in dire need of a ventilation system). Was this sign a joke? John bent down and inspected the lawn. He found a small, white-flowered mustard and mentioned something about its conservation value. And then we walked past the “Stellata Natural Area” lawn, past the restroom, turned left on the paved bicycle path, and began our Monday Morning Botany Walk. Only while preparing this report did I realize that this was all a joke. Oh, I hope I’m not the only dense one in our group. The sign was not meant to identify the lawn in front of the restroom as a natural area, but rather the 2,077 acres behind the restroom as a natural area. You can read about the Stellata Natural Area [HERE](#).
- John explained that St. Joe State Park (named after the lead company, not Saint Joseph) was once amongst the most used and abused of lands as it supplied lead to much of the world. The place was full of dangerous pits and lead tailings. The St. Joe Lead Company had some 250 miles of underground tunnels beneath the region. In 1976 much of it became this huge 8,243 acre park - outsized only by Lake of the Ozarks State Park and Johnson’s Shut-Ins State Park. It continues to be transformed. Parts of it are now popular for use by off-road vehicles (*gulp!*). Other parts have been allowed to heal and become botanically diverse, which we can attest to today.
- John pointed-out the black marginal hairs of a lichen growing on a locust tree.
- We found quite a few dried-up Prairie Dock (*Silphium terebinthinaceum*) leaves from last summer. They were still very rough – just as they are during the growing season. Under a microscope (which I did) they look quite dramatic. The hairs are mostly gone, but their pustular bases remain like little white stones that vividly contrast with the dead, dark brown leaf-blade.
- We found a number of emerging green plants, including Mullein (*Verbascum thapsus*), Cactus (*Opuntia cespitosa*), Cinquefoil (*Potentilla* – don’t yet know which one because St. Louis has 5 species – listed [HERE](#)), and American Columbo (*Frasera caroliniensis*).
- Among the trees that caught our attention were quite a few Gum Bumelia (*Sideroxylon lanuginosum*) and Winged Elm (*Ulmus alata*) trees. Some of the Gum Bumelia trees had galls on their thorns.
- We had to climb up a ledge to reach the still-dormant “Rock Sandwort” plant. It was worth it. At C9, *Sabulina michauxii* is very conservative. Like the *Noccaea perfoliata* plant that we found earlier, this is a species with at least 3 different Botanical Names. *Sabulina* is its current name (according to [Plants of the World Online](#)). The other two names (“*Minuartia michauxii*” and “*Arenaria stricta*”) are listed as synonyms of “*Sabulina michauxii*”. Although we have 20 members of the Carnation Family (Caryophyllaceae) in St. Louis (see list [HERE](#)), *Sabulina* is not one of them. According to its [BONAP MAP](#), its northern range hasn’t quite reached us yet.
- Don’t remember how we got on the subject, but John suggested that our local limestone was inferior to Indiana’s Salem Limestone because we were located near the edge of a sea where there was wave action and mud infiltration. By contrast, Indiana was in the middle of a sea which resulted in their Salem formation being more pure and therefore more sought-after as a building material.
- After we returned to the cars, Wayne (our astronomer) thoughtfully gifted us with “Eclipse Glasses” so that we and our families will be able to view the April 8 solar eclipse safely. Only 3 weeks away!

#### PARTICIPANTS:

There were 12 of us botanists today, who are (in alphabetical order):

Renee Benage, Kathy Bildner, Wayne Clark, Sebastian Forward, Michael Laschober, Sharon Lu, Burt Noll, John Oliver, Kathy Thiele, Mark & Deb Tolcou, and George Van Brunt.