

WILD ONES JOURNAL  
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# WILD ONES®

A VOICE FOR THE NATURAL  
LANDSCAPING MOVEMENT



# A Message from Wild Ones Education and Program Coordinator



By Sara Rassing

In the cycle of seasons, spring is another season of change. Sure, you can see this in our gardens and landscapes, but as I write this, I'm reminded of the movie "Groundhog Day." This cinematic masterpiece uses the backdrop of an early spring day to explore themes of transformation and self-reflection, as the protagonist experiences change in a very literal sense through repeated days. As you will read in this issue of the Journal, transformation, movement and change are constant themes for Wild Ones.

Monarchs very literally embody transformation through metamorphosis. Read more in the latest installment of our butterfly and pollinator series, supported by Monarch Joint Venture, which can be found on [Page 10](#). Besa Schweitzer sheds light on the personal impact of tagging these remarkable insects with her mentor and the guidance of Monarch Watch, a community science initiative dedicated to the research, conservation and study of monarch butterflies.

Witness the subtle yet profound movements shaping our natural world, and incredible role ants play in the lifecycle of native wildflowers in "Ants are Superheroes in the World of Native Wildflowers" by Kim Strader, highlighted on [Page 30](#). Strader describes the symbiotic relationship between ants and plants, where ants, often unseen agents of change, help the movement and dispersal of seeds across forests and meadows.

On [Page 35](#), you will learn what it takes to be a "true" pollinator. A pollinator is an animal that moves pollen from the male anther of a flower to the female stigma of a flower. It is a process that is critical to species and ecosystem health and resilience.

And finally, you might notice a few changes in the Journal as well. In an effort to keep the Journal relevant and engaging for our readers, the scope and focus of the Journal has changed over time. Complete the [Journal Feedback Form](#) and help guide the direction. Members are always welcome to send their thoughts and comments to [support@wildones.org](mailto:support@wildones.org). And finally, we are always looking for contributors. You can read more about the [submission guidelines on our website](#).

What happens with all this movement? Seeds spread, new flowers bloom and Wild Ones continues to reshape our own and others' minds about natural landscaping. And of course, as we all know, the beauty of native plant gardens and landscapes stems from their ever-changing nature.

P.S. For those that don't follow the tradition, Punxsutawney Phil's prediction this February indicates an early spring, so you can look forward to a change in weather coming to your area soon.

*Sara is a biologist and administrator in higher education. She started part time at Wild Ones this past summer and supports the mission through her active involvement in the development, strategy, reporting and budgeting for programs such as the Lorrie Otto Seeds for Education Grants, Native Garden Designs, Wild for Monarchs, Wild Ones Journal and educational webinars.*



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Established in 1977, Wild Ones is a national nonprofit organization of members who teach the benefits of growing native plants and work together to grow and restore natural landscapes. Wild Ones' definition of a native plant: A native plant is a species that occurs naturally in a particular region, ecosystem and/or habitat and was present prior to European settlement.

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“Perfection”

Standing tall against dark green blades, the freshly opened Louisiana blue iris (*Iris giganteaerulea*) is queen of the wildflowers. Photo Contest submission

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# The spring beauty mining bee: A specialist that needs our help



A spring beauty mining bee (*Andrena erigeniae*) in Great Falls, Virginia on Virginia spring beauty (*Claytonia virginica*).  
Photo by Judy Gallagher/Flickr

By James Faupel

As you read this, winter is sliding away as the daily available sunlight grows. Soon, the soil will warm, and early spring wildflowers will begin to poke the tips of their leaves out, waiting for consistently warm temperatures.

Virginia spring beauty (*Claytonia virginica*) is one of our earliest native spring ephemerals. The *Claytonia* genus includes host plant species for its very own pollen-specialist bee. The spring beauty mining bee (*Andrena erigeniae*) is an ephemeral bee that emerges from its mother's nesting cavity only for the brief period of the year when the Virginia spring beauty flowers are blooming.

The bees then die, but not before they have a chance to produce their own offspring for the next year. In Missouri, this specialist bee has only the singular host plant from which she can acquire pollen to feed her larvae—*Claytonia virginica*—but there are two additional *Claytonia* species within the bee's entire range throughout North America from which she can also gather pollen.

*Claytonia virginica* is typically a 6- to 8-inch tall, perennial, herbaceous wildflower that mainly grows in moist, loamy soils throughout eastern North America. These diminutive plants can also be found growing in the understory of mesic prairies—which have similar sun

exposure as the dappled sun-lit understory of woodlands—and can be easily seen following the duff removal of a dormant season burn.

Currently, however, you are more likely to come across this plant in a human construct: the mowed turf grass lawn. Virginia spring beauty has adapted to flourish within semi-frequently mowed settings, especially when there is dappled shade from limbed-up trees above them. Irregular mowing schedules of many tree-laden community parks allow for the perfect conditions for these spring wildflowers to have time to reseed and spread, and for insects to nest in the less frequented and less compacted soils.

### The lifecycle of this partnership

Virginia spring beauty is one of the first native spring wildflowers to emerge from the soil and flower each March/April, alongside other early spring favorites such as bloodroot (*Sanguinaria canadensis*) and yellow trout lily (*Erythronium americanum*). Its bloom period can last three to four weeks or more, while also beginning seed production all along its stem, within the pollinated and spent flower heads.

Shortly before the flowers open, male spring beauty mining bees exit the previous year's nesting cavities. This allows the males to get acquainted with their surroundings and build up energy to prepare for territorial competition. Days later, once the female spring beauty mining bees begin to emerge, the males have a very short window of opportunity to mate due to the short bloom time of their host plant and the unpredictable nature of spring weather. Every future generation of their species is dependent on their parents' successful rendezvous each spring.

All adult male and female bees visit flowers to drink nectar to gain energy, but only females gather pollen purposefully to take back to their nests to feed their larvae. Since there are so few reliable pollinators active at this early stage of the season, the Virginia spring beauty is provided with premium quality cross-pollination services by this loyal, specialist female bee as it systematically visits each flower within range. The female spring beauty mining bee lays a single egg upon each pollen provision that she brings back and deposits in her approximately 6-inch-long nest cavity, tunneled into the loamy soil below her host plants. As the blooms fade, these specialist bees fade too, passing along the torch for their species' future to their offspring in the ground. Throughout the rest of that spring and into autumn, each of the larvae in the nest cavity has hatched out of its egg, eaten the pollen provision from its mother, pupated and then

### Why should we care about native bees?

Cross-pollination occurs when an animal collects pollen from one plant species and then carries that pollen to another plant of that same species. Pollinators play an essential role in natural ecosystems by helping plant populations reproduce, a role that we rely on heavily for continuing our worldwide supply of food, as well as many other plant-based resources, such as medicine, clothing and building materials. Research shows that approximately one-third of our global food supply is reliant on animal pollination. About 80% of the plants in the world rely on animal pollination. Our continued survival on this planet is dependent on pollinators.

Bees are some of the world's best animal pollinators. Female bees actively search for and collect pollen on their bodies to take back to feed to their young. Most other animal pollinators only transfer pollen between plants that accidentally stuck to their bodies. That makes them more likely to deliver the wrong species of pollen, thus leading to unsuccessful pollination.

Many people know of only a handful of bee species, which number more than 4,000 in the U.S. and 20,000 worldwide. Many native bees are pollen specialists, focusing on gathering pollen from a small group of host plant species, sometimes from only one species of plant. This behavior exponentially decreases the odds of the wrong pollen being delivered to the host plant. This incredible plant-animal relationship can make specialist bees some of the most reliable pollinators of the plant-based resources that we and so many other animals depend upon to survive.

The mining bee is a specialist bee that has evolved to have an interconnected relationship with its host plants. Native to North America, they are one of the largest bee families with numerous species found across the continent. The story below is about one variety of mining bee, the spring beauty mining bee (*Andrena erigeniae*), that true to its name, specializes in collecting pollen from the spring ephemeral wildflower spring beauty (*Claytonia virginica*). Its range is from Minnesota to New York, south to North Carolina and Georgia.

matured into its adult form by winter. Over winter, under the snow and leaves, the spring beauty mining bees await the warming of the soil to once again begin taking their brief midday flights in the warm rays of spring sunshine.

This specialist bee's lifecycle may be one of those easily affected by future climate change fluctuations, as it depends primarily on one species of flower to exist, a flower whose emergence is, as far as I can ascertain from published literature, completely controlled by climate-influenced soil temperatures. The spring beauty mining bees' emergence is also sensitive to the warming of the soil. It has evolved to emerge from the soil at the same time as the spring beauty blossoms open. A poorly timed bee

emergence before or during a late deep freeze could kill off localized bee populations or destroy that year's flowers. Destruction of the flowers would deplete the bees' nectar and pollen resources, starving them to death.

Similarly, an early season mowing during the bloom period could result in all the flowerheads being destroyed, which could also cause the devastation of a localized population of spring beauty mining bees. Female mining bees (*Andrena*) don't travel far from their soil nesting cavities to forage for their host's pollen and nectar, so localized disturbances can have detrimental repercussions.

Additionally, poorly timed mowings during Claytonia bloom or seed development periods would prevent



This mining bee (*Andrena vicina*), one of the most common and conspicuous *Andrena* species in eastern North America, digs in the sand. Photo/[Flickr](#)

plants from being able to spread that year, and too frequent of mowings every year could potentially starve out a plant population, making it disappear forever.

Female spring beauty mining bees evolved to nest in the loose loamy soils of woodlands. The wheels of heavy equipment frequently running over spring beauty turf area will also compact the soil to the point that the plants will no longer be able to grow there, and the bees will not be able to nest in it.

#### **How can you help the two species to survive?**

*Claytonia virginica*, which grows in [plant hardiness zones](#) 3-9, is a great candidate for home landscapes, especially since it loves the low competition for sunlight and root space in a mowed turfgrass lawn. The plant is most easily propagated from seed, as their tubers can be very deep in the soil, making it difficult to transplant. If you wish to start growing this plant on your property, first try purchasing locally sourced seed from a native seed retailer. If you cannot find a reliable local source, ask a friend or local park that has a large lawn population if you can collect some of their seeds

before they mow. You would need to start checking for ripening seeds as soon as large patches stop flowering. Do not collect seeds of native plants from any land other than your own without having first received permission to do so, and do not harvest plants or seeds from small wild populations. Once you have an established planting of spring beauties, remember not to use herbicides or insecticides on your lawn, and to mow high and infrequently to allow for seed development and minimal soil compaction.

Female spring beauty mining bees need large patches of pollen resources to be able to rear their young, so you likely won't see too many of these bees at small populations of *Claytonia virginica*. Growing plants from seed can take many years and it will take even longer for your plants to spread into a large patch. Starting native plant populations on your property so they can grow and spread into future resources for wildlife, such as for these specialist mining bees, is an incredibly important action to take. You may never get to see the fruits of your labor yourself, but you should plant them nonetheless. This concept

is similar to an old saying that you may have heard: "Blessed is the one who plants trees under whose shade they will never sit."

Depending on your site's connectivity to surrounding green spaces, pollinators will find your flower population with time. Successful native plantings don't happen overnight, so patience is a virtue. Due to our ever-sprawling urban and suburban population centers and fragmented green spaces left in the wake, it is vital that we find ways to include the displaced native plants back into our human landscapes, to continue to support the wildlife these plants sustain.

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