



**Hummingbird Hill
Native Plant Nursery**

May/June 2023 Newsletter

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Thank you to everyone who came out to the nursery this spring! It is great to see so many plants going towards creating habitat in the local area! We enjoy meeting and talking with each and every one of you. As the growing season progresses, the nursery will continue to be open for visitors.



Native Plants

**& EASTERN BOX
TURTLES**

At this time of year, the blooming spring ephemerals of March and April have quieted. Taller herbaceous plants have obscured them from view, but, at ground level, they wait just a little longer. Their leaves are yellowing, their past flowers transforming to ripened seeds and fruit. Soon they will disappear until next



Mayapples (pictured above) have seeds that are dispersed by Eastern Box Turtles.

spring.

Mayapples (*Podophyllum peltatum*) are among these ephemerals. In early spring, their closed leaves, poked up like little stubs from between the leaf litter and twigs on the ground. As the weather continued to warm, these stems grew taller, and their two umbrella-like leaves unfurled. Below these leaves, a solitary white flower bloomed, now a small yellow fruit. Mayapples mainly spread by underground rhizomes, but this technique only allows them to form isolated colonies. In order to spread farther away, the seeds within their yellow, lemon-like fruits are essential. These ripen less than a foot from the ground, making a perfect food source for Eastern Box Turtles (*Terapene carolina carolina*).

At about five to six inches long, Eastern Box Turtles are a mid-sized terrestrial turtle species. Their high-domed brown or black shell is typically mottled with orange markings, which helps them blend into areas of dappled sunlight. When habitat conditions are stable, one Eastern Box Turtle can spend its life in an area not much larger than an acre, carrying the seeds of natives like Mayapples throughout its territory and building more plant colonies. Eastern Box Turtles are also able to assist native plants in another way: the germination rate of the seeds improves as they are digested. As the seeds travel through the turtle's digestive system, the thickness of the seed's coat is reduced, aiding to its growing success. Since the relationship between Mayapples and Box Turtles is so close, changes in the populations of either affects both parties.



An Eastern Box Turtle digs a hole with its hind feet to lay eggs.

In recent years, Eastern Box Turtle populations have declined. Currently they are listed in Virginia as a Tier III Species of Greatest Conservation Concern, and several other states consider them to be a species of special concern or endangered. Because they are slow to mature and have a low reproduction rate, Eastern Box Turtles are more susceptible to population declines than many other types of wildlife. These turtles don't reach adulthood until they are 5 to 8 years old, sometimes longer, – though they may live to be over 100 years old in the wild – and they typically lay around 4-5 eggs per year. Their recent decrease in population threatens the native plants that depend upon them for dispersal, as well as others in the food web.

Their decline is caused by various factors, including pesticide use and roadway collisions. If you see an Eastern Box Turtle crossing the road and can safely move it out of harm's way, this is a great way to help an individual turtle survive. It is always recommended to make sure to place the turtle on the side of the road where it is heading; otherwise it may try crossing again. It's also best not to relocate turtles to an environment deemed better, as Eastern Box Turtles have small home



territories and will often attempt to travel back to the original place. In the east, capturing turtles for the pet trade has also caused a reduction in populations. While it is illegal, this practice still continues today. Wildlife authorities warn individuals to not post locations of recently seen turtles on social media, as poachers have been known to use this method for targeting turtles.

The most substantial reason for their decline, however, is habitat loss and fragmentation as natural lands are urbanized and cleared for human use. When the native plants are lost in these areas, turtles are no longer able to survive there either. Sometimes Eastern Box Turtles may live for many years in isolated havens of undisturbed land among urban settings. As more development occurs, these populations continue to become more isolated until they can't spread genes with other turtle populations and their group dwindles away.

How can we, as individuals, help? Designating areas as habitat corridors in both urban and rural settings can help to make a large impact for Eastern Box Turtles. These corridors offer a protected and usable environment where turtles can attain shelter, food, and a place to fulfill their life cycle. Even if they are small, they can make a big difference as places where turtles can find refuge. Any unused portions of lawns are a great place to start encouraging native volunteers and adding native plants. These natives will regenerate the ecosystem and support native wildlife. When the native plants are there and growing in a natural meadow-like fashion, the rest of the food web automatically benefits, including turtles. When planting, make sure to keep the layout loose and meadow-like, encouraging plants to spread and having mixed heights throughout. This format is a main element to functioning habitats and makes them supportive to wildlife. Letting fallen leaves remain in the planting adds needed moisture for turtles. Eastern Box Turtles come out of hibernation in March through early May. As weather gets warm, they are primarily active during the early morning; on especially hot days, they will bury themselves under leaves where the soil is cooler. The leaves left in plantings also are utilized by critters that turtles feed upon and will add nutrients to your planting as they decompose.

When Eastern Box Turtles are young, they depend on a diet high in protein, feeding upon species like snails, slugs, spiders, and millipedes. As they grow older, berries and other plant matter become a more prominent part of their diet. The sweet red fruit of Wild Strawberries (*Fragaria virginiana*) ripen close to the ground where Eastern Box Turtles can easily reach them. This native



Eastern Box Turtle feed upon the fruits of natives like Wild Strawberry, Black Raspberry, and Black Cherry (top to bottom).

spreads quickly by runners to form a groundcover among taller native plants. In woodland settings, the scarlet berries of Jack-in-the-Pulpit (*Arisaema triphyllum*) are used. Encouraging native volunteers like Common Pokeweed (*Phytolacca americana* var. *americana*), Pennsylvania Blackberry (*Rubus pensilvanicus*), and Black Raspberries (*Rubus occidentalis*) is helpful for turtles too. When the berries of these taller species fall to the ground, Eastern Box Turtles include them in their diet. Fruit that drops from trees and shrubs is also widely scavenged. Some of these species include Black Cherry (*Prunus serotina*), Paw Paw (*Asimina triloba*), Spicebush (*Lindera benzoin*), Red Mulberry (*Morus rubra*), Maple-leaf Viburnum (*Viburnum acerifolium*), and American Elderberry (*Sambucus canadensis*). Many other species of wildlife, including birds, will also be frequent visitors. Some shrubs that are specialized to more acidic environments, like Early Lowbush Blueberry (*Vaccinium pallidum*), are also used. When these plant species aren't present, it can be beneficial to add them to areas of suitable habitat, where they are native. Along with helping box turtles, it will also aid in making the habitat more complete and supportive for all types of wildlife.

While these plants above are notable for being used by Eastern Box Turtles, it's essential to think of your property as a whole and consider what native plants would naturally dwell within that habitat. When those are added, whether or not they have berries or fruit, everything else in the ecosystem benefits, including turtles. Adding any species that are native to your specific habitat will help box turtles. Planting any native grasses, flowering species, trees, and shrubs, that are suitable to your particular site, will help counteract habitat loss. These plants will create shelter and form a usable environment for insects and other wildlife that Eastern Box Turtles depend upon in the food web. Once the native plants are there, the wildlife will come, and, hopefully, an Eastern Box Turtle among them!

Would you like to take things a step further? Consider helping with scientific research!

Sightings of turtles can be reported to the Eastern Box Turtle Census Project. This program is run by the Virginia Herpetological Society and helps biologists study box turtle populations and create distribution maps for the species. Please visit the following website for this:

<https://www.virginiaherpetologicalsociety.com/reptiles/turtles/woodland-box-turtle/boxturtle-reporting/boxturtle-reportingform.htm>



Spicebush shrubs produce berries which are used by Eastern Box Turtles.

What's New At the Nursery

WE ARE OPEN FOR VISITORS! Nursery appointments are available on Wednesdays through Saturdays. Please visit our website to sign up. We look forward to seeing you at the nursery!

WE ARE BUSY GROWING MANY NATIVE PLANTS!

We are constantly restocking our inventory. As the growing season progresses, we look forward to continuing to add new species to our selection!



This year we are excited to be expanding our inventory of **ANNUAL & BIENNIAL NATIVES!**

Pictured are two new species we will be offering: Sensitive Partridge Pea (*Chamaecrista nictitans* var. *nictitans*), a legume with yellow flowers, and American Pennyroyal (*Hedeoma pulegioides*), a fragrant member of the mint family with blue/purple to white flowers. These will be available in 2.5 inch pots. Other species we will have available this year include Hog Peanut, Common Evening Primrose, Field Thistle, Sweet Everlasting, and more!

FREQUENTLY ASKED QUESTION

Q: Is it okay to plant natives during the warmer months of the year?

A: Yes, natives can be planted anytime from the beginning of April to the end of October. They establish very quickly. We recommend checking all plants for water during the first 2-3 weeks after they are planted. Only water them if needed during this time. If it is a very dry period, you may need to check them for a couple of weeks longer.



The Self Seeders

~ A LOOK AT ANNUALS, BIENNIALS, & SHORT-LIVED PERENNIALS ~

Diversity is key. You may have heard this phrase – or something very similar – various times in reference with planting natives. Perhaps you've read it's important to have a mix of heights, different bloom times, and an assortment of colors in your planting. Maybe you have heard it's beneficial to have a combination of trees, shrubs, and herbaceous plants, layering them in the planting to create an understory. Someone might have told you that within the planting there should be both flowering plants and grasses. All of these things are absolutely true! To support wildlife and create a healthy habitat, a large amount of diversity is a necessity. Different colors of flowers are used by different insect pollinators, and the array of plants of varying heights and structure is essential for creating shelter and food

sources in a functioning habitat. To create more diversity within the planting, there is one more key element that is often overlooked: the life spans of the plants in the habitat should also vary.

In each natural habitat in Virginia, there is an assortment of annuals, biennials, and perennials. Perennials are typically dominant, and the shorter-lived species are mixed throughout in smaller quantities. These plants co-exist with each other, and together they are able to form communities that sustain wildlife. Each plant species is within the habitat for a reason and fills a specific need, supporting a unique set of wildlife. If the plant species is not there, then the fauna that depends on it will not be there either. When restoring pockets of land for habitat, it is important to try to mimic these natural combinations of plants and make the habitat corridor as functional as possible.

Having a backbone of perennials or longer-lived species in your planting and then gradually working

PLANT DEFINITIONS:

ANNUAL:

A plant that germinates, grows, flowers, and set seeds in a single growing season, completing its life cycle in 1 year

BIENNIAL:

A plant that grows foliage in its first year and blooms/sets seed during the second year, completing its life cycle in 2 years

PERENNIAL:

A plant that lives for 3 years or longer



Sensitive Partridge Pea is a native annual that persists well in dry habitat corridors. It is a host plant for Little Yellow Sulphur and Cloudless Sulphur butterflies.

to introduce shorter-lived species can turn habitat corridors into better ecosystems. Some annuals, like Common Horseweed (*Conyza canadensis*) and American Burnweed (*Erechtites hieraciifolius*), may come in as volunteers. These two species grow well in areas that have been recently disturbed and are natives that should be left to grow and spread. As annuals, they grow, flower, and set seed in one year, completing their life cycle in a short time period.

Other annuals, like Sensitive Partridge Pea (*Chamaecrista nictitans* var. *nictitans*), may have more trouble coming in on their own, and dry habitats could benefit from having this species reintroduced. This annual has yellow pea-like blooms and extrafloral nectaries that are used by pollinators. The feathery-looking leaves will sometimes fold up upon being touched, providing it with another common name of Wild Sensitive Plant. These leaves are fed upon by the caterpillars of Little Yellow Sulphur and Cloudless Sulphur butterflies as a host plant. Like many native annuals, this species blooms in summer and fall. Later, its brown legume seedpods form.

Native annuals, like Sensitive Partridge Pea, are prolific self seeders. The seeds are fed upon by native birds, including Mourning Doves and Eastern Meadowlarks, and there are plenty of seeds leftover for reseeded purposes also. Different than non-native annuals, once native annuals are introduced, they are easily able to persist in habitat corridors without reintroduction each year. The main thing is to ensure that only non-native weeds are being pulled out of the habitat corridor and that the young seedlings of annuals, as well as other longer-lived natives, aren't accidentally weeded out from the planting.

Biennials take on a different growing strategy, putting their energy into growing only foliage the first year. During the second year, their flowers bloom and they set seed, completing their life cycle. Common Evening Primrose (*Oenothera biennis*) is a biennial native that employs this method. Its leaves form a basal rosette at ground level during the first year, and the tall flowering stalks appear during the second growing season. Its four-petaled yellow flowers have a long



Common Evening Primroses are a native biennial.

bloom period from May through October in open habitats. Moths, especially large sphinx moths are drawn to the blooms, and bees and hummingbirds also visit. After the end of the second year, it's 3-6 foot tall flowering stalks turn brown, the plant setting seeds. These seeds disperse abundantly, filling in around perennials in the planting without out-competing other plants.

Other species, like Black-eyed Susan (*Rudbeckia hirta* var. *pulcherrima*), are short-lived perennials. These species typically live for around 3 years. Their energy in the early portion of their life cycle is devoted to foliage and plant size. After, their prolific flowering begins. Black-eyed Susan's composite, yellow flowers have protruding brown centers and are visited by a wide range of native insects: butterflies, bees and wasps, flies, and beetles. The caterpillars of Silvery Checkerspot butterflies use the hairy textured foliage for food. As the warm months fade, seedheads develop and eventually these seeds scatter, falling to the ground and ensuring that future generations grow at the site.

Annual, biennial, and other short-lived native species are resilient. In general, plants in this group have long bloom periods and produce many flowers to ensure successful pollination and seed production. It is necessary for them to have bountiful seeds, compensating for both their future offspring and wildlife food sources. Their livelihood depends on the many seeds they produce and they have adapted to spread well in natural landscapes and persist.

Oftentimes, with annuals or short-lived plants, it is easy to think of non-native ornamental species. These are planted in the ground, they bloom through the summer, perish, and that's it. Next year, they will need to be planted once more, and this same process repeats itself again and again. With short-lived natives, the approach is much different. When planting these, the goal is to initially introduce them into a habitat corridor planting site and then step back and watch them spread around. It is recommended to initially add multiple plants of the same species to ensure successful pollination. Planting short-lived natives towards the center of the habitat corridor can also be a good idea. This allows them to have plenty of room to travel within the planting, as opposed to seeding only at the edge of the designated area. Once plants are established and self-seeding regularly, they appear almost like perennials, flowering each year as they move around throughout the planting. The upfront assistance to reintroduce short-lived species is well worth it, creating a healthier and more diverse ecosystem for both plant and animal life!



Black-eyed Susans are a short-lived perennial and a host plant for Silvery Checkerspot butterflies.