

## Top “10” Lists of Wildlife Plants By Alonso Abugattas

In 2010, I was one of several people asked to suggest what I considered the top 10 wildlife plants for various categories for home owners to use in the Chesapeake watershed by friends at Audubon at Home. I also thought this would be nice to have for the various Master Gardener classes that I teach. This topic of “best” wildlife plants had come up in discussions numerous other times before, including in Arlington County. Host plant (caterpillar food) information is according to Tallamy and this is important since some 96% of terrestrial birds feed on caterpillars (and sawflies) as major food sources when nesting. In fact, some birds we normally consider to feed on other sources (like hummingbirds and seed eaters) really need the insect protein to feed their young. No other insect group supplies as much of this valuable food source (as pointed out in Tallamy’s *Bringing Nature Home*), so when you plant these hosts, you’re also supporting birds and numerous other animals such as bats. What follows were my suggestions for the specific categories they wanted to use, but this is still a work in progress:

### Top 10 Trees

- 1. Oaks** – No other group of trees that I’m aware of provides more wildlife value than the genus *Quercus*. Over 600 different insect species for example (mostly small Cynipid wasps) use them exclusively for host plants, unable to survive on any thing else. It also hosts more Lepidopteran species (543) than any other North American plant studied so far. Since caterpillars, along with sawflies, are the main component in the food of most terrestrial nesting bird species, these are incredibly important plants, without even considering the multitude of other creatures that also feed on them or their acorns, if not exclusively (over a 100 vertebrate species throughout the USA are known to eat acorns). Numerous birds (60+), mammals, and other creatures also use the cavities and other parts for nesting or shelters. At least 61 species of woodboring beetles, at least 37 species of treehoppers, at least 21 species of leafhoppers, and countless other insects utilize them. Since the myriad of oak species (and their many hybrids) have evolved to grow in most of the existing habitats/growing conditions, it comes down to finding the right plant. Sawtooth Oak is not native and should not be planted due to its invasive nature. A few to consider: White Oak (*Q. alba*) – Some salt tolerance but can be affected by soil compaction. Chestnut Oak (*Q. prinus*; syn. *Q. montana*): Dry, terrace gravel. Pin Oak (*Q. palustris*) Shorter than many other oaks, tolerant of compaction, some salt and even flooding.
- 2. Hackberries** – The *Celtis* species are not anywhere near as important as the oaks, but they have a few specific, mostly butterfly species that makes them one of my favorites. In our region, the Hackberry Emperor, Tawny Emperor, and Snout butterflies are among the 43 species the genus is known to host. At least 12 borer beetles will feed on it, as well as numerous bugs, mites, and psyllids which can alter tree growth through galls and witch’s brooms for instance. The trees also supply “sugar berries” as food for birds (48 species being documented). *C.*

*occidentalis* is our common tree species (*C. tenuifolia* or Dwarf Hackberry is a shrub species also found around here as is Sugarberry Hackberry *C. laevigata* whose fruit is edible). Hackberries tend to grow in riparian areas and can take some wet and salty conditions. Normally 30-50 feet tall but can get up to 100.

3. **Hickories** – *Carya* supports 235 Lepidopteran species in addition to producing the nuts for which they are best known providing food for lots of other wildlife. This includes at least 44 species of woodboring beetles and at least 33 other insect species. Most can get to 100 feet tall or so. 4 species are local to the DC area: Sweet Pignut (*C. ovalis* also called False Shagbark or Red Hickory since real Shagbark is not local to the DC area.), Pignut Hickory (*C. glabra*), Mockernut Hickory (*C. tomentosa*) and Bitternut Hickory (*C. cordiformis*). Bitternuts prefer moist conditions, the others are much more general and adaptable except they do not like it wet. Pecans (*C. illinoensis*) are more of a southern species but are sometimes planted and seem to do well in our area.
4. **Willows** – The genus *Salix* supports 455 Lepidopteran species, including Mourning Cloaks, Viceroy, and Red-spotted Purple Butterflies (which then of course feed countless birds). Willows are often considered superior as a food source for bees (including a few oligolectic bees that use their pollen almost exclusively) and other pollinators. Willows prefer moist locations and plenty of sun. Black Willow (*S. nigra*) can get to over 100 feet tall and grows quickly. Silky Willow (*S. sericea*) is really a shrub and gets to about 12 feet or so. Weeping Willow is not native, and certain varieties of weeping willow, such as the Corkscrew Willow, have been found to be invasive.
5. **Sassafras** – *Sassafras albidum* hosts 38 species of Lepidoptera, including being the preferred host plant for the Spicebush Swallowtail and a few silk moth species. Its berries also feed a variety (at least 23 species) of birds. Although not a major browse source, it is consumed by several mammals (including humans who use it as a spice in Cajun dishes in particular). Can grow to 60 feet, thriving in most soil conditions except for extremely wet areas and suckering abundantly. It is not a favored deer browse.
6. **Basswood/American Linden** *Tilia americana* hosts 149 species of Lepidoptera. Its unusual seeds are eaten by a variety of creatures and it's considered a "bee tree" because of the popularity of its blooms to honey bees and other species. At least 11 wood borer beetles species also make use of it, as do at least 23 other insect species. This fast growing tree is not picky of soil conditions, can get to over 100 feet tall and is well known for the deep shade it provides.
7. **Black Gum/Tupelo** – *Nyssa sylvatica* hosts 26 known species of Lepidoptera and has wonderful fall color. Various pollinators visit the flowers (Tupelo honey is delicious). Not all trees fruit equally but various animals make use of those trees that do provide this food source and at least 28 bird species have been

recorded feeding on the fruit. This large shade tree is tolerant of various soil conditions as has beautiful fall color, growing to 80 feet at times.

8. **Hollies** – The genus *Ilex* contains numerous shrub species like Winterberry and Inkberry (South of us only) known for their berries. The best known species though is the American Holly (*I. opaca*) which is a tree. The berries are by no means a favorite food for birds (which is why they can be enjoyed in the landscape throughout winter) but are a “starvation food” waiting for returning migrants and sometimes being all there is to eat. Some 20 bird species rely on the berries for emergency winter food, some people claiming the freezing/thawing makes the berries more palatable for returning birds. American Holly is also evergreen and so provides good shelter for animals, especially in winter. The genus also hosts 39 known species of Lepidoptera and the smaller species have 49 birds types that have also been recorded eating the fruit. A drawback however is the need for both a male and female tree to be nearby and that only the female holly trees bear berries. American Holly can get to 50 feet or more and most hollies do better with some sun.
9. **Tuliptree** - *Liriodendron tulipifera* 21 species of Lepidoptera have been documented as using this tree as a host plant. They grow very fast (one of the tallest growing and widest on the East coast) so have softer wood for carving using the stone and burning tools of the time and also have very straight trunks that often shed the lower branches so despite rotting fairly easily, were ideal for this use. John Smith reported that some canoes could hold 40 warriors at a time. I saw some in the Smoky Mountains that were so huge that my whole family could stand in front of the trunk for a picture. Honeybees use it quite a bit when it is in bloom and so it makes up a bulk of the honey produced where it is plentiful. The flowers are also sugary snacks for lots of critters (I’ve seen orioles “nectaring” on them and raccoons raiding them also). The helicopter-like (samara) seeds themselves are consumed by various critters, including squirrels, but are not a favorite really of any. The leaves though make it a preferred host plant for Eastern Tiger Swallowtail butterflies and our largest inchworm species, the Tuliptree Beauty moth, as well as Tuliptree Silkmoths It is a very common tree and often makes up a good portion of the trees in stands of young woods (since it is usually not preferred browsed of deer). It is the state tree of Indiana and Tennessee.
10. **Black Locust** – (*Robinia pseudoacacia*) Although considered by some to be a weed tree, it is quite beautiful and fragrant in bloom. The blooms are also quite edible and sweet, as I know from experience. Just take care not to step on any of the thorns (as I learned during my misspent youth from experience). The bean-like pods are not edible. Black Locust rarely gets to 80 feet tall and some 72 species of Lepidoptera use it as a host plant. At least another 35 insect species also make use of it. Although favored by bumblebees, many other pollinators use it also.
11. **Black Cherry** – *Prunus serotina*. See #1 below.

## Top 13 Native Shrubs/Small Trees

- 1. Cherries – Cherries – *Prunus spp.*** Many reach tree size. Despite damaged/wilted leaves containing a cyanide precursor called prussic acid, many animals still feed on cherries, particularly the fruit or undamaged leaves. 456 Lepidopteran (moth/butterfly) species are supported by the genus *Prunus* (second most recorded by Doug Tallamy of any woody plant in North America). Most of these are believed to use our native Wild Black Cherry *P. serotina*, including our state insect the Tiger Swallowtail Butterfly. This also despite cherries having extra-floral nectaries which attract ants that help protect the foliage from some insect browsers. Many pollinators also use the flowers of course. Black Cherry is also the tallest native *Prunus* species in our area and can provide good bird nesting locations. At least 84 species of birds have been seen feeding on its fruits in addition to a large variety of other animals which also feed on various plant parts (including at least 40 mammal species across the USA, although ruminants (such as cows, sheep, and goats) in particular can get cyanide poisoning from browsing on the damaged/wilted leaves). Another species that is not found locally, Common Chokecherry *P. virginica*, was the most widely used food plant in North America by Native American Indian tribes (163 documented uses). It was in fact the 3rd most ethnobotanically used plant in North America with another 132 documented uses as a drug/medicine (5th most documented in North America), 4 uses as a fiber, 2 as a dye, and 36 other uses by native peoples. Wild Black Cherry had almost as many similar and overlapping uses but, perhaps because it is more limited in range, not as many overall uses that were recorded. One of Black Cherry's common names, Rum Cherry, shows another use that was not limited to the indigenous people. It is also used in cough syrup, wines, and jellies as well as for furniture.
- 2. Buttonbush/Honeyballs – *Cephalanthus occidentalis*** I'm aware of no better shrub for attracting various pollinators. It also hosts 19 species of Lepidoptera and various birds (24 species) will eat from the seed heads. This shrub (5-12ft tall) has globular white flowers and blooms better in the sun. It is very tolerant of wet conditions but can easily grow in regular garden soil as well if not allowed to completely dry out frequently. Buttonbush also attracts numerous nighttime nectar-feeding insects, including moths, as well as occasional hummingbirds during the day.
- 3. Shadbush/Serviceberry/Juneberry *Amelanchier*** The genus (with numerous common names and some tree species) is known to host 124 species of Lepidoptera and at least 40 bird species eat the fruit as well as countless mammals (including people, which I will admit is why I have it ranked so high). The white flowers are beautiful for a brief period of time in early spring and supply much needed nectar sources at this bleak time of year. They will tolerate some shade and act as understory shrubs but produce more flowers/fruits with sun. They are a superb wildlife plant as well edible landscaping. Here are just a few of the local species to choose from:

Running/Dwarf/Thicket Serviceberry (*A. spicata* sometimes listed as *stolonifera*) Get this one if it's available. It only grows to 6 feet tall but spreads slowly providing a nice hedge effect. It produces abundant and fairly large berries which are delectable! It can also tolerate drier conditions than any of the other Shadblows I'm aware of.

Allegheny/Smooth Serviceberry (*A. laevis*) This "Sarvisberry" prefers moist but well-drained soil and is probably the most common found in the wild locally. The fruits are tasty and the shrub can get to 25 or so feet.

Downy/Canada Serviceberry (*A. arborea*) This is our tallest Shadbush sometimes getting to 40 feet but is normally much shorter. Although all *Amelanchiers* can sucker, this one does so the most. Its fruits are also the least tasty of the group. It is also the least tolerant of dry conditions.

4. **Spicebush** – *Lindera benzoin* Not only a host plant for the Spicebush Swallowtail and 10 other species of Lepidoptera, but its berries are also a favorite food source for migrating birds (17 species noted). It is shade tolerant and very deer resistant. You need both male and female plants to produce berries. 6-12 feet tall normally and has been used for making tea and flavoring other food/drink.
5. **Dogwoods** – *Cornus spp.* This genus, which contains many tree species, is known to host about 118 species of Lepidoptera. The drupes are a vital food source for birds and some 93 species are known to eat them. Although Flowering Dogwood (our state tree/flower and largest native member) is the best known, numerous other local species also provide great wildlife benefits. These include:  
Alternate/Pagoda Dogwood (*C. alternifolia*) 15ft tall, some shade, blue-black fruit, Silky/Swamp Dogwood (*C. amomum*) 6-10ft tall, tolerates wet conditions where it is thicket-forming, some shade, Gray Dogwood (*C. racemosa*) to 15 feet, sun-shade, tolerates poor, compacted soils not very common, and Stiff/Swamp Dogwood (*C. foemina*) to 12 feet, light shade, moist soils, black fruit.
6. **Eastern Red Cedar/Eastern Juniper** *Juniperus virginiana* This genus are which often grows to tree size, is known to host 42 species of Lepidoptera. The fruits are a favorite of 90 species of birds, including Cedar waxwings which get their name from this plant (and helps explain its very common presence along fencerows where birds stop to defecate). Being evergreen, it provides excellent winter cover. Somewhat drought tolerant and doing best in full sun, this large shrub can grow up to 40 feet tall or more but normally is smaller and is slow growing. Since cedars can act as alternate hosts for a fungus that can affect apples, planting them near each other is usually discouraged. This deer-resistant shrub comes with an asterisk since when other food is short, an evergreen like this, shows "deer sculpting" quite a bit. It may not be preferred, but that may also mean it is still available when other browse is gone, especially in winter when other deciduous food is not visible. This also a favorite shrub for deer to use during the rut, serving as a convenient shrub to rub off velvet or spar.



7. **Wax Myrtle/Southern Bayberry** - *Morella cerifera* formerly *Myrica* This genus is known to host 108 species of Lepidoptera. About 85 bird species feed on the berries. It is mostly evergreen so does supply some good winter shelter also. You need both male and female trees nearby to get fruit. Although it can take some shade, it does better with more sun and moist conditions. It will tolerate city conditions (and some salt) with pavement near its roots and is sometimes planted as a living screen. This coastal plain shrub grows 6-20 feet tall normally but is not known to be found in the wild in Arlington.
  
8. **Persimmon** *Diospyros virginiana* This tree is known to host about 46 species of Lepidoptera. Its fruits are a favorite of numerous mammals (including people once the fruit have been subjected to a hard frost) and even many birds. Up to 70 feet tall (30-40 more normal) and does best in full sun (drought tolerant once established). Male and female flowers are on different trees.
  
9. **Elderberry** *Sambucus canadensis* This genus is known to host 42 species of Lepidoptera. Some 120 bird species have been seen feeding on its fruits. The broken stems provide homes for mason bees at times also. It can get to 8 feet tall and prefers moist conditions and some sun. The fruit is edible after some preparation and it has been used to make wine.
  
10. **Viburnums** – 104 Lepidoptera species are known to utilize viburnums. At least 35 bird species are known to favor their berries as well as several mammal species. Various pollinators visit the fairly showy flowers. Here are a few of the local species to choose from:
  - Maple-leaf Viburnum (*Viburnum acerifolium*) The most shade tolerant member of the group and shortest in stature. It is normally 3-6 feet tall with batches of dark blue berries that may persist well into winter. Not very tolerant of salt or pollution.
  - Arrowwood (*V. dentatum*) Does best in sunnier locations where it will produce abundant blooms (but not very drought tolerant) and get to about 12 feet in height. Bluish/black fruit are better liked than others viburnums as forage.
  - Black Haw (*V. prunifolium*) 8-15 feet tall normally and often noted for its red fall foliage. It produces good displays of white flowers (especially in the sun) which then yield edible berries. It is fairly drought and wet tolerant, but not of compact or salty soil conditions.
  - Possum Haw/Witherod/Wild Raisin (*V. nudum*) 6-12 feet tall and preferring more sun than shade. Beware that many plants are also called possum haws. Holds its leaves well into winter, particular in the South where it is semi-evergreen. The clusters of whitish blooms turn into berries that change multiple colors before ending up bluish black. It blooms best with more sun and likes moist situations. The acidic fruits are edible.
  
11. **Hawthorns** – *Crataegus spp.* A confusing group as far as sorting out species. Both Washington (*Crataegus phaenopyrum*) and Cockspur Hawthorn (*Crataegus crus-galli*) are some of the better known natives. More than 39 bird species have

been seen eating the fruits, even more eat the more than 168 Lepidoptera species that feed on this genus. The thorny growth provides excellent nest sites and discourages deer browsing also. Can get to over 35 feet tall but normally are much shorter, like full sun and are drought tolerant once established. Often planted for their spring flowers, long-lasting fruits, and as a living hedge/barrier.

12. **Shrubby St. Johns Wort** *Hypericum prolificum* This genus is known to host some 20 species of Lepidoptera. It also attracts large numbers of small bees and other pollinators to its golden blooms. 3-6 feet tall, this is a very adaptable shrub, taking partial shade and not being very picky of its soil conditions.
13. **American Beautyberry** – *Callicarpa americana* This aptly named shrub is beautiful in the late summer/fall with an incredible display of colorful berries. It is usually 3-8 feet tall and prefers sun and moist soil. It can take some heavy pruning. Not a favorite food for birds but they will eventually consume the fruit.
14. **Sumacs** – *Rhus spp.* 98 different bird species have been seen eating the fruits and even more birds feeding on the 58 or so Lepidoptera species that use this genus as host plants. Only female plants produce fruit. But can spread by suckering, forming dense colonies (thus limiting their use in manicured landscape situations). They have excellent, blazing fall color. Sumacs do better with sun and can be quite drought tolerant once established. Although not considered a great nectar source for butterflies, I recall participating in a large butterfly count during a drought where the only reliable nectar sources were sumacs that were covered in butterflies. Poison Sumac (*Toxicodendron vernix* or *Rhus vernix*) is a wetland/bog plant and rare in our region. Here are some sumacs to consider:  
Fragrant Sumac (*Rhus aromatica*) The shortest of the batch, 3-6 feet tall typically, it can handle very hot and poor soils. It is “fragrant” in that its crushed leaves do not have a good odor.  
Winged/Shining Sumac (*R. copallinum*) 5-8 feet tall typically and with distinctive “winged” foliage. Spreads slower than most sumacs (excepting perhaps Fragrant).  
Smooth Sumac (*R. glabra*) 8-16 feet tall and without the “hairy” look of Staghorn. It is the fastest spreading and may not be suitable for garden settings.  
Staghorn Sumac (*R. typhina*) The largest sumac, getting to 20 feet on occasion. The “hairy” appearance gives it its name and adds something to its fall look in addition to the scarlet foliage.
15. **Chokeberries (Red, Black)** - *Aronia arbutifolia* and *A. melanocarpa* respectively. Beautiful white flowers and long-lasting fruit make this a favorite for landscapes, especially in the sun. The fruit are not preferred food sources but are a “starvation food” readily consumed in late February or March by desperate birds, but still have some 21 species eating them. Plants tolerate most soil conditions including compaction, some salt, some flooding, even pruning. Black Chokeberry is shorter (to 6 feet or so). Both have been used to make juice and host 6 species of Lepidoptera.

16. **American Strawberry Bush/Hearts-a-burstin'** – (*Euonymus americanus*). A beautiful alternative to the invasive Burning bush which often plague our wild areas with very interesting berries. It hosts 11 species of Lepidoptera (but is sometimes also affected by 5 species of non-native caterpillar brought over on the invasive Burning Bush and other non-native Euonymous species). 4-6 feet tall normally and very shade tolerant, it unfortunately is a favorite of deer. Prefers moist conditions.

### Top 10 Wildflowers

1. **Spring Beauties** – *Claytonia* has more documented spring pollinators visiting it than any other spring flower studied so far. Although a spring ephemeral, it can be included in any shady, deciduous situation where it will spread to form a carpet of white flowers. Although the “fairy spuds” that make up the root are edible, this does kill the plant.
2. **Milkweeds** – *Asclepias* are well documented as being wonderful pollinator plants, as well as the host plants for such Lepidoptera as Monarch butterflies and at least 11 other documented species. Due to their toxic properties, they are also remarkably deer resistant for the most part (though some deer learn the flowers and young shoots are delicious). The local monarch favorite is Common Milkweed (*A. syriaca*) but this may not be the best for a formal setting since they spread by underground stolons and so will not ‘stay’ where they are planted. They are certainly quite useful in less formal and school settings and are the favorite because they seem to have the most toxic compounds (cardiac glycosides) the caterpillars need to make themselves distasteful to predators. A better option for most gardeners might be Swamp Milkweed (*A. incarnata*) which despite its name does fine in regular garden soil and doesn’t spread by runners. It will do well in clay also (as does the Common Milkweed). If you have wet soil, then you can also try Red Milkweed (*A. rubra*) in addition to the Swamp Milkweed. Purple Milkweed (*A. purpurascens*) will also handle wet conditions but as long as they eventually drain well and does very well in sandy situations. Another species that does well in just ordinary soil is the Whorled or Horsetail Milkweed (*A. verticellata*) and it tends to stay short. White or Redring Milkweed (*A. variegata*) is also supposed to be easy to grow but much harder to find. If you have hot, dry conditions, then try Butterflyweed (*A. tuberosa*). Once established it can take droughts and even some cutting. It is the least favored by monarch caterpillars though because it has very little toxin (cardiac glycosides) in its leaves, but other butterflies and adult monarchs love it as a nectar source. Why do you think it’s called butterflyweed? Do you have dry, sandy soil? Then try Blunt-leaf or Sand Milkweed (*A. amplexicaulis*). There are also some species that will tolerate shadier conditions such as Green Milkweed (*A. viridiflora*), Four-leaved Milkweed (*A. quadrifolia*), and Poke Milkweed (*A. exaltata*). The latter 2 are native just west of here. There are plenty of native alternatives for just about any garden site. There is even a Climbing Milkweed (*Cynanchum leave*) vine often called Honeyvine because of its sweet scent (if not very spectacular



flowers). Planted near schools, they can serve as wonderful examples of various colorful insects evolved to feed on these host plants.

3. **Goldenrods** – *Solidago* This genus is known to host about 115 species of Lepidoptera. Most of the *Solidago* species are attractive to butterflies, especially Monarchs. There are many native species and almost all bloom in the fall so they can be cut back around July 4<sup>th</sup> or when they get 2 feet high to keep them bushier. Deadheading the first and largest flowers back to healthy foliage promotes second flowering from side buds. Most prefer full sun but Blue-stemmed Goldenrod (*S. caesia*) is very shade tolerant. Golden Fleece Goldenrod (*S. phacelata*) is semi-evergreen. Species to use include: Tall Goldenrod (*S. altissima*), Silverrod (*S. bicolor*), Erect Goldenrod (*S. erecta*), Zig-zag Goldenrod (*S. flexicaulis*), Late Goldenrod (*S. gigantea*), Early Goldenrod (*S. juncea*), Elm-leaf Goldenrod (*S. ulnifolia*), Sticky (Riverbank) Goldenrod (*S. racemosa*), and Rough Goldenrod (*S. rugosa*) which is somewhat shade tolerant and spreads quickly by runners.
4. **Asters** - Many species in the Asteraceae family (composites, now reclassified, so not true asters) are native and wonderful for attracting butterflies. Care must be taken with some of the newer cultivated varieties that provide little nectar. This family has been documented as being the host plant for some 109 Lepidopteran species. Both New England (*Aster* (now *Symphyotrichum*) *novae-angliae*) and New York (*Aster* (now *Symphyotrichum*) *novi-belgii*) are superior species. Most types can also serve as host plants for Pearl Crescent Butterflies. White Wood Aster (*Aster divaricatus*, now *Eurybia divaricata*) is very shade tolerant but does not host any butterfly species. The Heath Asters on the other hand are quite good but prefer more sun. Most are fall bloomers and can be cut back around July 4<sup>th</sup> or by the time they get 2 feet high to encourage bushier growth.
5. **Dogbanes** – The various Indian Hemps or *Apocynum* species are one of the top native butterfly plants found locally. Approximately 40 butterfly species have been found to utilize dogbane in Virginia as a nectar source. They can spread very vigorously, however, in favorable, full sun sites so care should be taken where they are planted. Deadheading spent flowers sometimes helps in getting re-blooms. Also note that like the similar milkweeds, they are toxic if eaten and were once used extensively for cordage by native peoples. 22 documented Lepidopteran species use Dogbane as a host plant. It is also deer resistant due to its toxic properties.
6. **Green-headed/Cutleaf Coneflower** – *Rudbeckia laciniata* is also sometimes called Cutleaf or Tall Coneflower and can range from 3-12 feet tall. It tolerates wet conditions and is a favorite of many different pollinators. It can tolerate some shade but blooms much better with full sun. This genus hosts some 16 species of Lepidoptera.
7. **Mints** - This family is known to host some 22 species of Lepidoptera also (Monardas about 7, Mountain Mints about 3). **Monarda:** (*Monarda* spp.) These

native perennials (including Bee Balm and Wild Bergamot) are also great for attracting hummingbirds and bees. They bloom better in full sun. Cutting spent blooms to side buds prolongs blooming but they do not usually re-bloom. Many people cut stems down to 4-5 inches of the ground once they're done flowering to promote healthier mounds of plants. Like many mints, they can spread aggressively by underground rhizomes. **Mountain Mint:** (*Pycnanthemum spp.*) There are many native species of this perennial. They don't generally grow as tall as Monardas but can also spread vigorously. Some people plant them near walkways to keep them from spreading but also so people can bump into them, releasing their minty scent. They are also favorites of bees. Hoary Mountain Mint (*Pycnanthemum incanum*) in particular is a bee magnet. Deer generally avoid eating most mints.

8. **Joe Pye** - (Formerly *Eupatorium maculatum*, *E. purpureum*, *E. fistulosum* now *Eutrochium*). This family has been documented as hosting 41 species of Lepidoptera. These native perennials can grow quite big (6-8ft) and can tolerate wet conditions. Joe Pyes attract numerous butterflies and several other pollinators. They are best used as a background plant and cut back sharply around July 4<sup>th</sup> or when they get a couple of feet tall to keep them bushier and increase blooms. They are somewhat shade tolerant and are not preferred by deer.
9. **Field Thistle** – *Cirsium* as a genus is a known host plant for some 29 Lepidoteran species. Not to be confused with the non-native and often invasive Bull Canada Thistles. A favorite of butterflies, it likes full sun and is drought tolerant once established. Its prickly leaves make it fairly deer resistant.
10. **Ironweeds** – *Vernonia* This genus is known to host 19 species of Lepidoptera. New York Ironweed (*Vernonia noveboracensi*) is a tall (4-8ft) native perennial with purple flower heads that can tolerate some shade and wet conditions. It can be cutback around July 4<sup>th</sup> or when about 2 feet high to keep it shorter and be used as a background plant. Several other Ironweeds (*Vernonia spp.*) are also quite good nectar sources with Upland Ironweed (*V. glauca*) preferring somewhat drier conditions. All are attractive to butterflies and other pollinators.

### Top 10 Ground Covers

1. **Golden Ragwort** - *Packera* (formerly *Senecio*) *aurea* or Golden Groundsel is mostly evergreen and spreads vigorously in moist, shady to partly sunny locations. It sends up tall stalks of yellow flowers that eventually have dandelion-like seed heads. The underside of the leaves, during certain times of the year, has a beautiful purple color. There are many other native Ragworts that can be equally used in yards but are not as easy to obtain. They are known to host about 18 species of Lepidoptera.

2. **Wild Ginger** – *Asarum canadense* is a low growing, spreading semi-evergreen ground cover that grows very well in moist shade. It is sometimes used as an alternate larval host plant for Pipevine Swallowtail butterflies but I don't personally believe that to be one of their virtues. It is considered to be deer resistant and not usually bothered.
3. **White Wood Aster** - *Eurybia divaricata* formerly *Aster divaricatus* spreads very aggressively in even very shady situations and poor soil of all types. It is best used for naturalizing in open woods where its white blooms can be cut back if self-sowing isn't desired. It can grow 1-2ft high and is quite good for difficult situations. Unlike other types of asters, this one is not known to host any species of Lepidoptera.
4. **Partridge Berry:** *Mitchella repens* is a beautiful low-growing evergreen ground cover for shady areas. The neatly paired leaves with the light stripe down the middle, the dainty white flowers and its unique double berries make it an attractive woodland plant and even terrarium subject. It can tolerate moist to dry conditions but is slow to get established. Care must be taken not to mulch the little plants and to keep them free from leaves that might smother them.
5. **Wild Strawberry:** (*Fragaria virginiana*) This edible native is not the creeping invasive with yellow flowers one often sees in one's yard. It is often used to cover banks and control erosion. 81 species of Lepidoptera are known to use this as a host plant. The fruits are very tasty but only if you beat the wild animals to them. It needs sun in order to produce fruit and thrive.
6. **Southern Fragile Fern:** (*Cystopteris protrusa*) Also called Lowland Fragile, Lowland Bladderfern, or Brittle Fern, this native can grow up to 16in tall but is normally around 6in. It spreads very quickly to form a lush blanket even in deep shade but only so long as it is moist. It is fragile in that heat, cold, and drought cause it to go dormant but it quickly comes back when conditions are more favorable again.
7. **Wild Geranium:** *Geranium maculatum* is a long-lived wildflower that can take sun to light shade as long as it is moist in spring when it blooms. It can spread rapidly, forming an effective, if not completely even, ground cover. 21 species of Lepidoptera use the geranium genus as host plants.
8. **Hay-scented Fern** (*Dennstaedtia punctiloba*) Named for the scent of its crushed fronds, this fern can really take off in moist areas. It can take a lot of sun if kept moist but care must be taken that its 18in fronds don't crowd out smaller or less competitive plants. It may go dormant if it dries out. Considered deer resistant. **Bracken Fern** (*Pteridium aquilinum*) can also grow aggressively and is much more sun tolerant and taller. Care should be taken where it is planted for this reason.

9. **Nodding River or Sea Oats** - *Chasmanthium latifolium* This grass grows vigorously in moist conditions, but can tolerate drier and even shaded conditions. It is often grown for its ornamental seed heads and 7 Lepidoptera species are known to use it as a host plant. It is considered to be deer resistant.
10. **White Snakeroot** - *Ageratina altissima* (formerly *Eupatorium rugosum*) can grow to 3 feet tall and has white blooms in late fall. It is a preferred bloom for various bees. It likes light shade and most soil conditions, spreading rather quickly when happy. It is generally avoided due to some toxicity by deer. Sometimes called White Sanicle or Tall Boneset, 5 different Lepidoptera species are known to utilize it as a host plant.

### Deer Resistant Native Plants

Please make note that there's a lot of variability in how resistant plants are to deer browsing. It can often depend on the population size of the deer, other available browse, environmental conditions such as drought, and even individual differences in both deer and plants. There really then is no completely deer-proof plant. In general, deer will try and avoid toxic, aromatic, thorny or fuzzy plants though. Most plants would benefit by being protected (by fence or tubes) till they get established or grow big enough to fend for themselves better. These are in no particular order.

1. **Spicebush** – *Lindera benzoin* Not only a host plant for the Spicebush Swallowtail and 10 other species of Lepidoptera, but its berries are also a favorite food source for migrating birds. It is also shade tolerant and deer resistant. You need both male and female plants to produce berries. 6-12 feet tall normally.
2. **Paw Paw** – *Asimina triloba* This plant is known to host 12 species of Lepidoptera. This understory shrub with its huge leaves can grow to 20 feet or more and is rarely browsed by most herbivores. This probably due to the presence of distasteful acetogenins which has even been used to make pesticides. The fruit (the largest edible fruit in North America) is a favorite of numerous mammals and other animals. It has great potential to control erosion by riverside habitat because it spreads by suckers (clones) and holds the soil well. Because it is thought to need to cross pollination with a different plant, 2 different, non-clonal or related plants are needed to produce fruit. Even then, it is mostly pollinated by carrion flies and you do not always get good fruit set. It does best in rich, moist but well drained soils.
3. **Milkweeds** – *Asclepias* are well documented as being wonderful pollinator plants, as well as the host plants for such Lepidoptera as Monarch butterflies and at least 11 other documented species. Due to their toxic properties, they are also remarkably deer resistant for the most part (though some deer learn the flowers and shoots are delicious, as they are to some humans too). Planted near schools,

doing best in full sun, this large shrub can grow up to 40 feet tall or more but normally is smaller and is slow growing. This deer-resistant shrub comes with an asterisk since when other food is short, an evergreen like this shows "deer sculpting" quite a bit. It may not be preferred, but that may also mean it is still available when other browse is gone, especially in winter when other deciduous food is not visible. This also a favorite shrub for deer to use during the rut, serving as a convenient shrub to rub off velvet or spar which can damage the plant.

9. **Bloodroot** – *Sanguinaria canadensis* This spring, woodland ephemeral has beautiful (but short lived) white flowers. The reddish sap is also loaded with various toxic chemicals which makes it unpalatable to many animals. This was used to paint the bodies of various tribes which is believed to have protected the people from insect pests.
10. **Tulip Tree** - *Liriodendron tulipifera* 21 species of Lepidoptera have been documented as using this tree as a host plant. They grow very fast (one of the tallest growing and widest on the East coast) so have softer wood for carving using the stone and burning tools of the time and also have very straight trunks that often shed the lower branches so despite rotting fairly easily, were ideal for this use. John Smith reported that some canoes could hold 40 warriors at a time. I saw some in the Smokies that were so huge that my whole family could stand in front of the trunk for a picture. Honeybees use it quite a bit when it is in bloom and so it makes up a bulk of the honey produced where it is plentiful. The flowers are also sugary snacks for lots of critters (I've seen orioles 'nectaring' on them and raccoons raiding them also). The helicopter-like (samara) seeds themselves are consumed by various critters, including squirrels, but are not a favorite really of any. The leaves though make it a preferred host plant for Eastern Tiger Swallowtail butterflies and our largest inchworm species, the Tulip Tree Beauty moth, as well as Tulip-tree Silkmoths. It is a very common tree and often makes up a good portion of the trees in stands of young woods (since it is usually not preferred browsed of deer). It is the state tree of Indiana and Tennessee.
11. **Field Thistle** – *Cirsium* as a genus is a known host plant for some 29 Lepidoteran species. Field Thistle (*Cirsium discolor*), not to be confused with the non-native and often invasive Bull Canada Thistles, is a favorite of butterflies, likes full sun and is drought tolerant once established. Its prickly leaves make it fairly deer resistant.
12. **Wild Ginger** - *Asarum canadense* is a low growing, spreading semi-evergreen ground cover that grows very well in moist shade. It is sometimes used as an alternate larval host plant for Pipevine Swallowtail butterflies but I don't personally believe that to be one of their virtues. It is considered to be deer resistant and not usually bothered.
13. **Nodding River or Sea Oats** - *Chasmanthium latifolium* This grass grows vigorously in moist conditions, but can tolerate drier and even shaded conditions.



It is often grown for its ornamental seed heads and serves as a host plant for 7 different Lepidoptera species. It is considered to be deer resistant.

**14. Horsetail:** (*Equisetum spp.*) Scouring Rushes are evergreenfern relatives that can spread underground aggressively. Some people put them in containers to keep them under control. They can grow in standing water but can also easily take regular garden conditions and are quite shade tolerant. Due their high silica content they are rarely bothered by pests, including deer.

**15. Eastern Prickly Pear Cactus:** *Opuntia humifusa* is the only native cactus in Virginia. It grows sprawling over rocky or sandy, dry and sunny locations, even along beach dunes. The pads on it look shriveled in winter due its adaptation of losing water to prevent freeze damage. It puffs back up during warm weather and can have large yellow blooms, often with a red throat. 5 different species of Lepidoptera are known to utilize it as a host plant. Its tiny spines (glochids) should be taken into account where you plant it and especially if you are weeding around it. This also makes it very deer resistant.

**16. White Snakeroot -** *Ageratina altissima* (formerly *Eupatorium rugosum*) can grow to 3 feet tall and has white blooms in late fall. It is a preferred bloom for various bees. It likes light shade and most soil conditions, spreading rather quickly when happy. It is generally avoided due to some toxicity by deer. Sometimes called White Sanicle or Tall Boneset, 5 different Lepidoptera species are known to utilize it as a host plant.

**17. Hay-scented Fern** (*Dennstaedtia punctiloba*) Named for the scent of its crushed fronds, this fern can really take off in moist areas. It can take a lot of sun if kept moist but care must be taken that its 18in fronds don't crowd out smaller or less competitive plants. It may go dormant if it dries out. It is fairly deer resistant.

**Bracken Fern** (*Pteridium aquilinum*) can also grow aggressively and is much more sun tolerant and taller. Care should be taken where it is planted.

Audubon at Home also suggests these additions: Wild Blue Indigo (*Baptisia australis*), Cardinal Flower (*Lobelia cardinalis*), Golden ragwort (*Packera aurea*), Beardtongue (*Penstemon digitalis*), Woodland Phlox (*Phlox divaricata*), Gray Goldenrod (*Solidago nemoralis*), New England Aster (*Symphotrichum noae-anglae*).