

Go Native: Basic Guide for New Gardeners

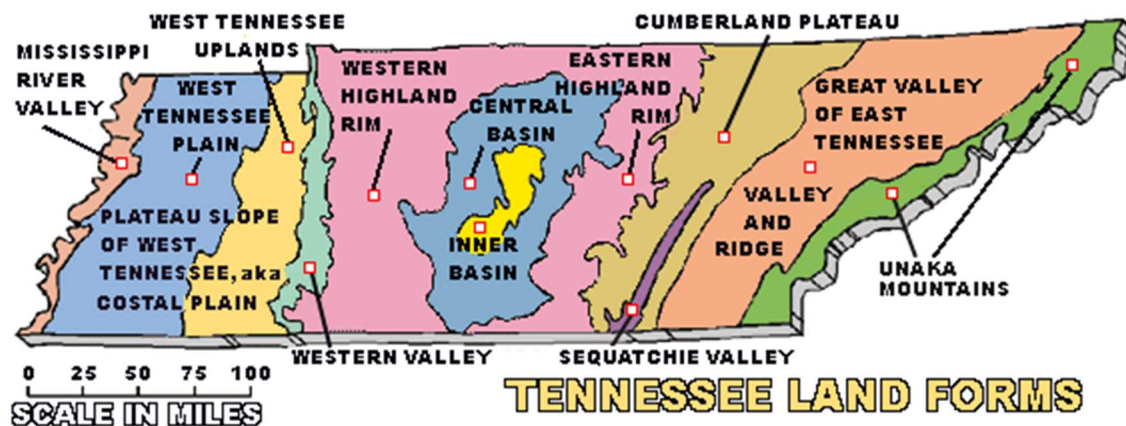
15 May 2020

There are many garden books, by the tens of thousands. This paper is not an exhaustive guide, but intended as a basic orientation on getting started. It is primarily an opinion piece assembled by one writer from many years collective sharing with other experienced gardeners in the Tennessee Valley Chapter of Wild Ones. It attempts, at all times, to be science based. Good luck!

Note: This information is directed to those planting ornamental home gardens. It can also apply to commercial and institutional landscapes. Although elements can be practiced in food gardening, that is not the focus of this document.

I. INTRODUCTION: WHO ARE WE?

1. Soils. Our soils are based on geology, as formed by our geography. They have been formed by eons of erosion and water movement from the underlying rock and minerals that form our topography. The Chattanooga area is in the 'Ridge and Valley' topography of East Tennessee. Most natural soils here are clay based, slightly acid, interspersed with layers of limestone and scree. Clay soils are susceptible to compaction but are otherwise quite fertile. Unworked clay will usually only need the clay broken up—with a shovel—and organic, humic material added on top or into the top layer of soil. The humic material will feed the living organisms, seen and barely seen, that healthy soils contain and nourish.

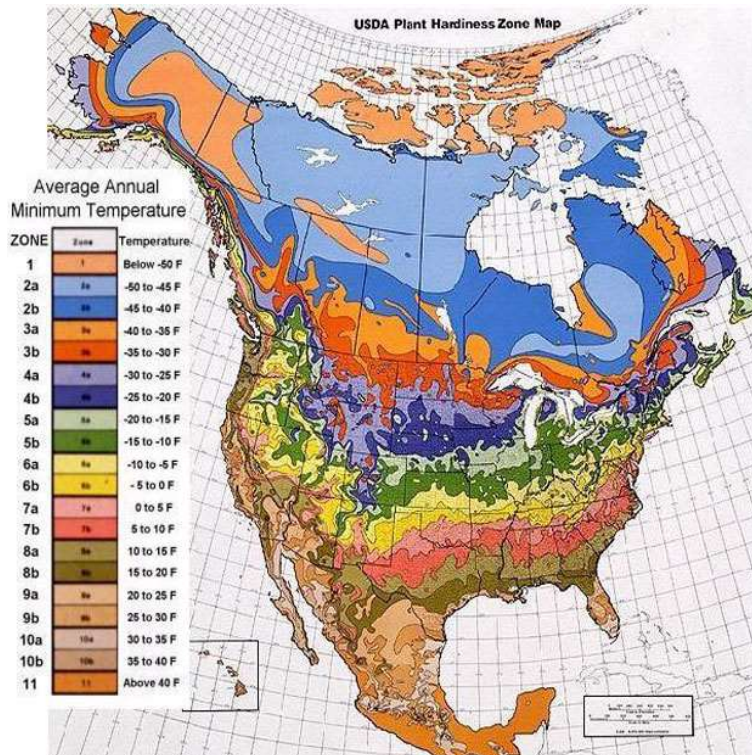


NOTE: new construction or urban sites likely have disrupted if not destroyed the natural soil Nature put there. Fill dirt is common, with unknown sources, chemistry, and usually little healthy soil structure. Native soils are likely highly compacted—with the air literally squeezed from them—by heavy machinery and construction traffic. It will likely require extensive work to return these damaged soils to health and/or natural conditions. There are many ways to improve large areas of stressed/unnatural soils, including one-time tilling-in of amendments or its opposite: building up in layers of organic material (i.e., similar to ‘lasagna’ beds). Both these and others have variations of degree, time, and expense, as well as advantages and disadvantages. We do not recommend any of this, however, for normal soil. Instead, use the soil Nature put there and find the plant that will flourish.

I. 2. Climate & rainfall. Native plants have evolved for millions of years to adjust to this region’s unstable climate swings. Clearly, it is warming. We are in USDA Horticulture Zone 7, probably moving from 7b to 7a. Zone maps of this common horticulture/agriculture too are readily available. A few notes:

a. USDA zone. Temperatures naturally swing wildly in fall and especially spring. Native plants, having evolved for this, tend to not be fooled by most hot spells in spring; nonnatives often spring forth only to be frost nipped later. That said, if the warm weather persists all plants will emerge; at that point a late frost can be especially devastating. With extra water and care, most will recover. Clearly, these protracted early (and late) heat events are increasing.

- Interpreting the maps. Our nights tend to remain hot and humid, without the ‘cool down’ of plants in the same zone from western regions. Humidity will definitely effect range where plants can thrive, as any rose gardener will quickly discover.



b. Frost dates. 50% [chance of] frost date is historically around the 2d week of April, with the 90% frost-free date in early May. The first, 'light frost' date is around Halloween with 'hard frost'—a freezing, killing frost, usually in the mid 20s—around Thanksgiving.

c. Rainfall. Plants native to any given region are more likely to survive routine, seasonal drought or wet cycles. Our rains typically occur in winter and spring, with July- October the driest season; our lowest rainfall is in October. However, protracted droughts, or extreme swings between dry and wet, make difficult gardening. In exceptionally dry times, NOAA will publish drought monitoring maps which can be helpful. Typically, **for established plants**, the standard advice is to provide one inch of water/week—ten days.

I. 3. WHAT IS A NATIVE PLANT?

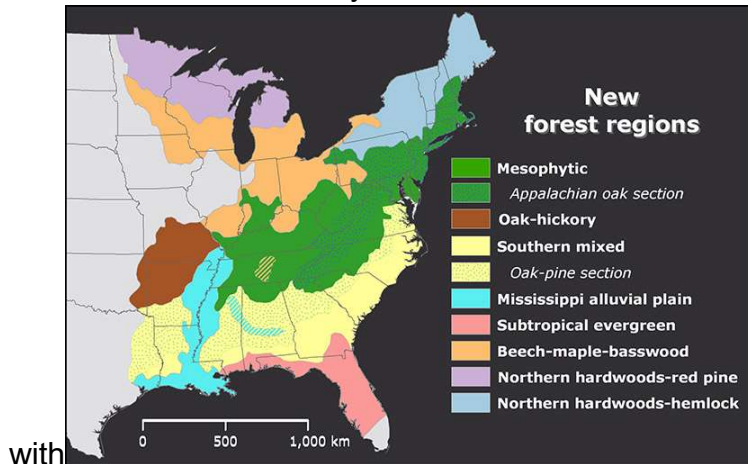
a. There is a wide array of opinion on what makes a 'credible' claim to being a native plant. *Basically, the closer you get to your home, the more 'native' the plant becomes.*

b. Non Native Plants. For reasons discussed above, recent research indicates that the native plant 'replacement rate' – where a given bird species [black capped chickadees] were able to reproduce themselves—was around 70% native plantings.

That said, we all have non- natives in our yards, beloved pass-alongs, evocative plants with deep emotional/aesthetic attachment, or practical ones such as herbs or paths of turf grass. We are not advocating the wholesale upheaval or your landscape, but a gradual shift to incorporate more native plants in a thoughtful and deliberate way, and to reduce, over time, the biologically sterile near- monocultures of turf grasses plus+ foreign plants, that urban/suburban landscapes have become.

c. The original biome that encompassed all of North America east of the Mississippi was the Great Eastern Forest. It consisted of many types of forest with varied dominant species. It also included many more grasslands, savannahs, meadows and prairies, particularly in the valley bottoms of East Tennessee’s Ridges & Valley terrain.

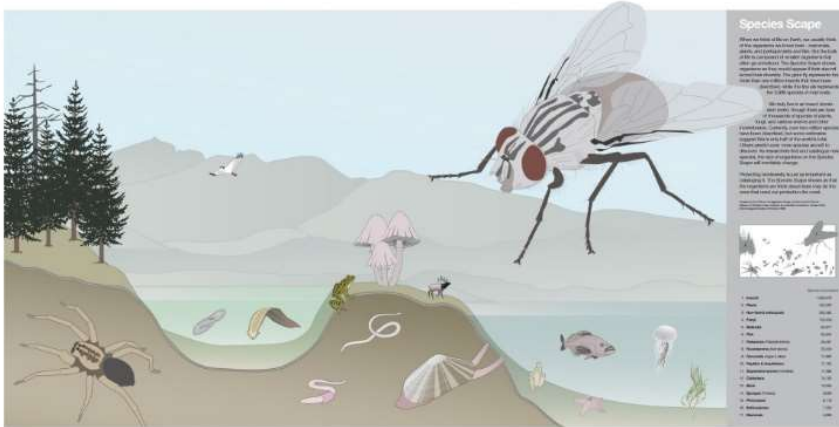
The swath of forest encompassing our region was the Eastern Deciduous Forest. Although this type forest had clearings, meadows, and small prairies, without natural or manmade interventions (storms, floods, fire), through natural succession this habitat reverts inexorably to a woodland habitat of old growth deciduous trees mixed



some conifers. Grasslands are also native, and will begins the process of natural succession when the environment changes.

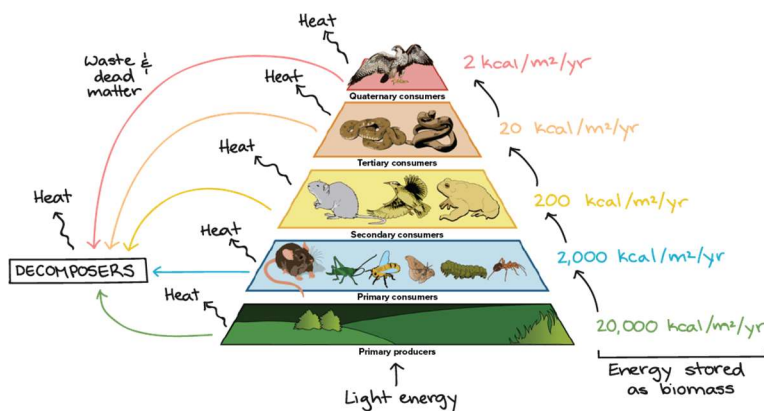
I. 4. WHY PLANT NATIVES? Books on this have been written by scientists, landscapers, gardeners, and botanists. Perhaps the best place to start is Douglas Tallamy’s “Bringing Nature Home.”

a. Insects are the basis of life on earth, and support all other species. Their populations are collapsing across many, if not most, species. Modern gardening practices, including much of traditional horticulture, are accelerating this negative trend.



b. Insect/plant arms race. Insects, trying to eat plants, have spent millions of years in an arms race with the plant kingdom, which in turn evolved defenses to stave off being eaten. Plants evolved extremely specific traits that repel all but a few of the insect horde trying to eat them. Insects in turn evolved the exact traits to access just one or two types or species of plants; sometimes that access is beneficial to the plant in some way; sometimes not. Most plants can resist most insects. Although there are some generalists, most insects at some point of their life span are restricted to eating only one or two species or genera of plants or plant families. If those plants are missing, they starve. Their populations will inexorably disappear.

c. Ornamental gardening trends. In the last 200 years we stripped native species found on-site and instead extensively populated our yards and lawns with non-native species from Eurasia. These new plants did not evolve with the insects found here, and therefore do not support (feed) our native insects, or do so in marginal ways. By using these non-native species, we are starving our own North American insects, which form the second tier (after plants) of the Great Food Pyramid: if we have fewer insects, we also have fewer birds, amphibians, reptiles, small rodents which eat them, and then of course fewer small mammals which eat THEM, and so on up to large prey species. And, to us.



d. Loss of natives and habitat. In brief, the standard North American lawn covered with non-native turf grasses, foreign shrubs, and a few annual/tropical flowers is basically sterile, or, at best, hugely impoverished, and does next to nothing to support our native fauna. When you add urban and commercial sites-- generally landscaped sparsely if at all-- as well as millions of acres of pavement, we have lost untold acres of habitat.

An excellent site with much of this information distilled is Dr. Doug Tallamy's Bringing Nature Home web site, at <http://www.bringingnaturehome.net/gardening-for-life.html>.

e. Planting with a purpose. Tennessee Valley Wild Ones believes in planting native plants to increase biodiversity and “**save the world, one yard at a time.**” For the reasons above we encourage all to add native plants to home (and any other) landscapes. This does not mean your garden will be any less attractive, nor need your style change. Good design, four season interest, and all the considerations that are fundamental to traditional ornamental gardening also concern us.

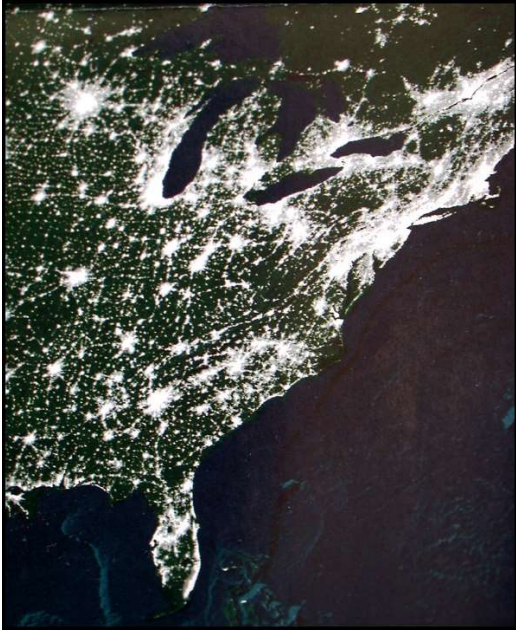
II. LANDSCAPE SERVICES & GARDENING PRACTICES.

II. 1. Gardening for Life. However, it does mean that instead of gardening exclusively for ‘a look’— the single horticultural consideration for decades— we **also** garden for “LIFE”. Through use of native flora, we are transforming our yards to small oases that we hope can collectively sustain all reasonably possible native flora and fauna. This includes insects, which are also wildlife. We at Tennessee Valley Wild Ones have found this approach infinitely more interesting, more ethical, more engaging, and far more satisfying than gardening just for pleasing decor. It is certainly cheaper, over time. And, this approach is desperately needed besides being SO MUCH FUN!

II. 2. Build/Design Systems. Instead of thinking of your garden as a collection of single plants or ornamental areas—such as ‘my shade garden, my sun garden, my iris patch’—instead think of it is an overlapping network of systems, working together to foster life and beauty. The techniques underlying one goal will also support many others-- many of the services we try to build into our gardens overlap. **Goal: ‘build habitat, make bugs!’** as well as having a cheap, beautiful, sustainable garden.

II. 3. Building Natural Services. What services has the natural world provided for us for so many eons? Services that our yards and gardens no longer do in our Turf Grass Nation? We assume there’s a huge deposit of natural and/or wild lands still making oxygen, insects, cleaning and absorbing water, cleaning the atmosphere and

running the food chain. But most of the land in the continental United States is privately owned, and in some kind of development; is that still true? What are the consequences of our depletion of this formerly self-sustaining natural 'bank' that provided these essential services for free? How do we begin to reclaim those services into our neighborhoods, commercial strips, cities, and agricultural lands?



Wild Ones believes that collectively, we can make real and important improvements to effect this increasingly dire crisis.

II. 4. Gardening for wildlife & pollinators/bees/butterflies. Gardening for wildlife, to include pollinators and other insects, presents many overlapping opportunities. When you garden for birds, you also provide the same things needed for gardening for bees, butterflies, hummingbirds, amphibians, and small wild creatures. Truly, it is all connected.

- Pollinator gardens. Butterflies and most moths, as adults, can feed on any nectar source present. They don't care if the pollen comes from an Asian or Tennessee flower, and although a few foreign plants are terrific nectar sources, most native bees markedly prefer native flowers by a ratio of 4 to 1. Additionally, the caterpillars which make the butterflies and feed birds tend to be **extremely specific to the one species/genus it's capable of eating**, for the reasons listed in Part I above. The classic example is the monarch butterfly, now failing, which caterpillars can only eat plants of the many milkweed species. This is why it is crucial to plant caterpillar **host** plants to support these populations.

III. GARDEN PRACTICES. How we garden is as important as the plants we choose. Many gardening practices now recommended are carried over from the highly specific requirements of food production as industrial- scale farming emerged after WW II. These techniques are applied on a massive and unquestioned scale to ornamental gardens, whether residential or institutional. You only have to look at your average public school campus to see the default to bleak, boring, and sterile landscapes. Traditional horticultural practices-- reliant on turf grasses, exotic plants, pesticides, herbicides, and synthetic fertilizers—has over time produced non- native and barren landscapes actively hostile to life. Our hope is for the opposite: fecund gardens cradling life, making life, and sheltering its intricate web. It is certainly a lot more fun— and it's a lot less work.

III. 1. Pesticides and, judicious, need- only use of fertilizers and herbicides. There are many, many pollinators in addition to butterflies, moths, and European, introduced honeybees. Our native bumblebees—there are 46 species—are in drastic decline. There are other pollinators—pollinating wasps, flies, and the more famous European honeybee. All are in trouble, some serious. As of this writing the evidence points to lost habitat loss as well as the massive use of pesticides across the globe. Large scale use by homeowners is indicated as well commercial agriculture. Systemic pesticides are incorporated by plants into their tissue at cellular levels, which ekes into the pollen ingested by pollinators; we don't know how long these effects last in any given plant. Although the pollinator may survive a few such contacts, evidence indicates that cumulative sub- lethal exposure through multiple feedings of contaminated pollen and nectar sources weakens the pollinator over time. It is then more susceptible to pests and diseases; it is weaker; it doesn't reproduce as well; it dies earlier and without crucial replacement offspring.



- Systemic pesticides such as neonicotinoids are extremely pervasive in commercial agriculture, including ornamental horticulture, and the sad truth is that plants sold to feed pollinators are often treated with these deadly pesticides. Finding plants free of systemic pesticides—which are used by

commercial growers for good, commercial reasons—is quite difficult and remains a challenge for those gardening with this ethic.

- We recommend pesticide use only by exception, for exceptional circumstance such as combating foreign invasive species like the woolly adelgid (hemlocks) and emerald ash borer (ash trees and their relatives). Due to weak regulation we are seeing more and more damaging insects arrive from other continents.

III. 2. Remove and combat foreign invasive plants. This is a real dilemma for many, especially those in older neighborhoods suffering from massive and relentless invasions from decades old planting throughout the 20th century. These ‘escaped aliens’ are smothering empty lots throughout our city. For those in new homes, foreign turf grasses and shrubs will likely be factory- installed as developer garnish, with whatever’s cheapest. We recommend putting resources into their removal, and it can be expensive. It can also be overwhelming and discouraging [note: this writer broke down and paid a crew for several removals, unregretted]. Large scale invasions will likely require both manual and chemical warfare. For detailed procedures and IDs, see **Tennessee Invasive Plant Council** at <https://www.tnipc.org/>

These plants can be attacked simultaneously, of course, but here are a few priorities which may help you focus. Killing invasive species are one of our rare recommended times to carefully use commercial herbicides—this is what they are for.

- Remove invasive trees: princess tree, tree-of-heaven, mimosa, white/Chinese [as opposed to our native red] mulberry. Paint stumps with herbicide.
- Cut invasive vines (Chinese wisteria, eponymous vines, English ivy, even Asian honeysuckles) off desired trees. Paint their stumps with herbicide.
- Remove the invasive shrub layer, so you can see what is actually there (bush honeysuckle, privet, rose-of-sharon,).
- Attack the ground vines: wintercreeper/eonymous vine, vinca, ivy, wisteria.
- Somewhat easy to remove manually: ivy, privet (especially in late winter, spring), honeysuckle. Difficult to impossible for manual removal: thin brittle plants such as wintercreeper, Asian bittersweet, vinca in any form. Asian wisteria and kudzu are in their own class—remove top growth and attack the roots/stumps repeatedly with herbicide.
- Monitor forever, especially if neighbors retain these plants (likely).

III. 3. Succession planting. One of the most crucial aspects of pollinator gardens is planting to provide pollen **across 3 if not 4 seasons**. Many pollinators live for only a few weeks as active, reproducing adults; therefore gardens should provide an array of pollen and nectar sources across the seasons, in succession. Different sized blooms support different sized bees, some of which are tiny. One helpful tool: ‘plant 3 for 3’—plant 3 new natives for 3 seasons, each year. This will add up!

III 4. Essential services. All creatures, include the tiniest, **require food, water, shelter, and a place to raise their young.** The latter may involve leaving bare patches (for nesting bees), debris, or rock/wood/brush piles (for many insects and small vertebrates), and leaving dried stalks up overwinter to shelter pith- nesting bees. This can be done artfully in even the most formal designs.

- See NWF Backyard Habitat Certification and “Gardening for Wildlife” programs, with lots of references and blogs. They have an excellent, zip code based plant finder database for supporting wildlife. Audubon has a similar database oriented towards birds, with much overlap between the two. See <https://www.nwf.org/Garden-for-Wildlife>. And <https://www.audubon.org/PLANTSFORBIRDS>

III. 5. Leaf litter: habitat bonanza. Recycle your trees’ leaf litter as much as possible, and gladly ‘acquire’ others’—many of us are proud to pick up roadside leavings or use of municipal sources. Lawn grasses and driveways need raking at some point each winter, but instead of moving leaves out to the curb, instead save time and labor by raking them into large pools under trees and shrubs, and into plant borders. Leaf litter not only nourishes your trees and plants, restoring nutrients, but provides crucial habitat and overwintering space for box turtles, salamanders, lightning bugs, toads, and the majority of moths and butterflies, which cocoons fall to the ground to pupate in leaf mold under trees. It makes no sense to sterilize your yards with leaf removal and then buy untold bags of mulch each spring.

III. 6. ‘Garden clean up’. Traditional horticultural has flogged these protracted fall chores for time immemorial. Although essential in vegetable gardens, when these techniques are also applied to yards and ornamental gardens we create expanses of hyper- groomed, sterile landscapes devoid of food, shelter, and overwintering habitat.

- We have somehow been taught a false aesthetic, confusing ‘neat’ with ‘beautiful.’ No, you don’t need to eat off your yard—but ‘the creatures’ do.
- In addition to leaving/recycling leaves on site, keep upright standing stalks and uncut ornamental grasses as shelter for pith- nesting bees. Cut tall tops as desired, but leave at least 18- 24 inch stalks for these pith nesters to overwinter and escape predation. This standing material will also shelter birds, reptiles and small mammals, and it’s incredibly beautiful lined with frost crystals, stirring in winter winds.
- There are many ways to do this-- although any combinations is possible, many choose to leave wilder areas further from the house or street, and groom more closely walks and foundation/driveway plantings. Brush and rock piles also provide excellent overwintering shelter; you will see bird using brush piles heavily in winter. Dead wood is essential for many insect and bird species, and can be

artfully designed into the garden. You can make such are as neat, sculptural, or simply 'heap it up in the back', as pleases you.

III. 7. Shrink lawns. Few of us live on wooded lots. The question is, how much lawn do we really need or truly use? Lawns are some of the most high maintenance areas you can plant, requiring constant maintenance—and who wants to mow in summer? Most of us need some, at least for walking, playing, or as part of deliberate design: a lovely pool of grass can set be visually pleasing, as well as an excellent place for your kids to play and dogs to poop. However, instead of large swaths of high maintenance and biologically sterile lawns, we can-- over time-- shrink lawn areas into pools or wide, sweeping paths by gradually expanding beds into them. You are limited only by your imagination. And, as always, by 'budget'--although lack of money can slow progress, it will not stop the determined gardener.

- **NOTE:** For remaining 'lawns' or 'mowed green stuff', set your mowers high. Taller grasses and clovers are healthier, provide more bloom for pollinators, and much more capable of withstanding inevitable summer dry spell. Mowers set at 3 inches will spare many insects-- bees, lightning bugs—reptiles such as toad and lizards, and even small mammals like baby rabbits a horrible death in mower blades. The close cropped lawn is a false aesthetic, unhealthy for grasses and wildlife, and laboriously maintained by humans. Life is short: mow less.

III. 8. Plant beds densely; use 'green mulch.' Plant as Nature does: densely as possible. In our bioregion, She does not waste space and uses different kinds of plants—even creeping shade plants in full sun—to occupy tall, medium, and in-between, intra-plant spaces. Nature loves ground covers—living, 'green mulch'-- and so do we. Plant as densely you can afford as you install your gardens. Yes, successful plants will expand over time, but denser plantings allow more habitat and greatly reduce human maintenance. Cheap ways to increase your plants include propagating your own; joining plant exchanges and groups such as Wild Ones—which members freely share; and shameless begging. Experience—which inevitably includes failures (usually the most expensive plants!)—will show which plants expand perfectly, too slowly and too quickly.

III. 9. Keystone species. Natives do not all offer the same levels of support to insects and other wildlife. Some, whether trees or shrubs or perennials, act as 'super supporters' of many overlapping species. These keystone species act as foraging hubs in which birds nest and from which they seek food. These species can be thoughtfully included into garden design, over time. This allows us to pack a lot of wildlife support with just a few species choices. Trees seem to be particularly important. Not all may be suitable for your—or any- garden, but usually there is an option somewhere in the genus range of species. Check out your zip code at <https://www.nwf.org/nativePlantFinder/plants>

III. 10. Artificial lights. Scientists are increasingly finding that artificial night light profoundly disturbs, disorients and even kills wildlife. This includes moths, lightening bugs, beetles, birds, and any other animals subjected to this profoundly unnatural exposure. Unnecessary lighting disorients or kills wildlife while providing little human benefit. Analyze your use—if security is an issue, consider motion detected lights rather than constant, all night light. Is it possible to screen street lights or neighbors lights with your own plantings?

IV. BASIC PLANT GARDENING: This is a primer to help you start installation.

IV. 1. BASIC SITE PLANNING AND ASSESSMENT. Assess:

a. Light (sun/shade/part sun/part shade/high dappled shade). This will change seasonally. Although some plants can take a variety of light conditions, this may be the single most important factor when choosing a plant.

b. Moisture. Wet/dry/average—and when. This will change seasonally. Hot, dry summers and autumns are standard here, and expect little rain from July—October. Native plants have adapted to these cycles.

c. Contour, topography, and run off. Where does water go when it rains? Does it stand? Where are hills, downslopes, and dips? How would a design fit—curl, nest, flow-- into these given aspects of your site? Visually, you are not restricted to repeat the property boundary's rectangle or square.

d. Hardscape: where are the fixed sites for utilities, buildings, paths, driveways? How fixed are they, really?

e. Site water access. It is extremely difficult to a garden without access to water. Even hardy or drought tolerant plants need water in the weeks or years it takes them to establish, as well as during extreme droughts. Preserving plants is usually far cheaper than the cost of watering them. NOTE: this is an important consideration for school or other institutional gardens

f. Management. For home owners, this will be you. For institutional and public gardens, who is really going to manage the garden, on the ground? Who will design it, choose plants, and install them? An unmanaged garden is an abandoned garden.

g. Maintenance. Related to the above, who will water, weed, mulch, and care for the garden? Replace plants? Observe/document? All gardens, no matter how 'nativized/natural' require maintenance. NOTE: We do not **recommend pesticide use in any form. Herbicides should be reserved for special case use against foreign invasives, and not for routine maintenance. Pesticides are extremely detrimental to pollinators and other life in ways that aren't fully understood, but which data**

irrefutably supports. They are not necessary for ornamental gardens except in rare cases for extreme situations or specimen plants. Yes, this information is repeated for emphasis.

h. Education and Sustainability. How can you ‘advertise’ your garden with signage and certifications such as ‘Monarch Waystation’ or National Wildlife Federation ‘Backyard Habitat’? Also, we encourage gardeners use organic and/or sustainable solutions that make the most sense and which are most sustainable. Consider how you use and reuse of water, as possible. Rain barrels are fashionable, but are they sensible on the site? How can you reuse water and mulch, keeping ‘inputs’ on site? How can you harvest storm water runoff? Are compost bins truly feasible on site, and if so, where? And so forth.

IV. 2. GARDEN DESIGN. This advice is oriented to home gardeners but may be helpful for institutional, school, and public gardens.

a. Start small. Don’t get overwhelmed. Gardening takes work, time, and at least initially, money; begin with the site(s) that you see the most or that bother you most. Many people find it helpful to break up their yards into notional exterior ‘rooms’, and design accordingly, one at a time. What do you want to see when you look outside? How can you build a frame for that view, a view which may not yet exist?

b. Trees and shrubs are the skeleton—the backbone—of any garden. Small trees and shrubs are overlooked space fillers. These woody perennial plants provide an often neglected understory to feed, cover, and shelter wildlife. Ideally, place trees and shrubs first, and plan perennial beds and grasses around the backbone they provide.

- *TIP: If you’re rehabilitating abandoned areas, weed from front to back, and re-weed the front each time you start moving into the old bed. It is much more encouraging!*

c. Purpose of each area. Do the site analysis (see publications, above). What is there permanently? What are you stuck with? What is the purpose of the designated area or ‘room’: corridor, view, utility (storage, etc.), play, food production, wildlife gardens, privacy screens, erosion control, ornamental? What do you need for privacy, for play, for work spaces, transit? (NOTE: these functions are not mutually exclusive.) What do you want to see when you look out your windows? How will you connect your garden ‘rooms’? What’s wet, dry, sunny, shady, and where does the water go in a downpour? Is that runoff good or bad? Can you catch and use it?

d. Maintenance.

- When building areas whether formal or naturalized, always consider how you will access it for occasional maintenance: stepping stones? Jump? Burn? Move?

- How you will water it? All plants need water until 'established', which time can vary from 6 to 8 weeks (most perennials) to 1-2 years (most shrubs) to 2-3 years (young trees). Some gardeners will plan to water; others refuse to water mature plantings. That is up to you.
- Weeding. Some will, some won't. The more densely planted your desired plants, to include intra-plant groundcovers, the less weeding required. However, editing undesired plants is part of gardening.
- Planting densely using 'green mulch' of live groundcovers requires far less maintenance than traditional gardening, but will still require some. *[personal note: it is a rare summer in which this writer spends more than 30 minutes per month weeding in the hottest part of the year. Conversely, I weed a lot in spring and fall]*

e. Style. Some gardeners prefer tightly controlled, highly groomed formal, balanced beds incorporating classic principles of repetition and design-- which can be done with native plants-- or with mixing native plants into symmetrical presentations. Some prefer wild and tumbled looks. These are not mutually exclusive either/or choices; each may be used in transition from one type garden to the other, or each in different areas in your yard.

- For example, many prefer a more formal look around the front of their house, but wild and more naturalized landscapes at the edges. Or vice versa.
- In truth many of us start with fixed design ideas and color schemes (*for example, I generally like 3 colors, or a single color 'threaded' through the yard*) but all experienced gardeners have learned that goes out the window when the plan hits the dirt: when key color elements fail—usually the most expensive ones-- or the 'focal point' dies, or a tree falls and fries your shade planting, or a repairman runs over your carefully planted, 3- season border.
- Be flexible and above all remember—it's your garden: **please yourself**. THE HEART OF A GARDEN IS CHANGE. Succession is natural. So is failure. Fear not!

NOTE: completely naturalized gardens are often misunderstood and opposed by neighbors who may cite you to city inspectors for what they consider a wild, unmaintained look or a violation of subdivision rules. Chattanooga has responded variously. Therefore, it's often simplest to keep the sidewalks and street curbs controlled with clearly discernable design elements such as mowed strips or definite borders, and then naturalize other areas. You decide.

(1) Style, continued, visual impact. Some prefer designing with certain colors, or number of colors. Or shade gardens that vary plant texture. Or arranging four season interest—what's showing in winter? Some like large swathes of a particular plant, although be advised those swathes will be mostly green and often brown after a few weeks' uniform bloom. Some garden for a particular season, although we recommend attention across all as more interesting and more supportive of insects and wildlife.

Some like to ‘plant in drifts of one’. Bringing in plants to support 3 seasons’ interest and bloom will, as noted, continuously feed urban/suburban wildlife. Remember, IT’s YOUR garden. Take ideas but don’t be afraid to make mistakes, play, kill plants, etc. You decide.

(2) Style, continued, Invasive/aggressive plants. Beware aggressive plants, particularly groundcovers and grasses. Many of us deal with legacy ‘gifts’ of foreign invasive plants such those previously listed (Wintercreeper, Japanese honeysuckle, English ivy, Vinca vine). That said, many native plants also can be strong spreaders, such as certain grasses, mountain mints, and the ubiquitous violets. Do your research; ask questions. Ask questions about plants being given away!

f. STYLE RESOURCES: too many to list. Three classics include:

- **Thomas Rainer & Claudia West “Planting in a Post Wild World”**
- **Larry Weaner & Thomas Christopher “Garden Revolution”**
- **Rick Darke & Doug Tallamy, “The Living Landscape.”**

IV. 3. Basic planting.

a. Light may be the most crucial aspect of site analysis. Plants evolved for specific light conditions in and out of the forest, meadow, and woodland edge. In general,

- FULL SUN is roughly 6+ hours of sunlight
- PART SUN about 4-6 hours or high, dappled shade
- SHADE is less than 4 hours of direct sunlight
- Very few plants will grow in total, deep shade: ferns and mosses are among them. Hostas are not native, and everything eats them from snails to deer.
- If the light is strong, hot, afternoon light, it skews the exposure more toward full sun plants. Experimentation—and failure-- is part of gardening.

b. Growing from seeds. Follow instructions on seed packets carefully: soil depth is especially important as light exposure is crucial to germination. Expect to water/mist carefully.

c. Propagating your own plants. This requires some knowledge, and techniques can vary widely among various native annuals, perennials, shrubs, vines, trees, and grasses. Woody ornamentals are usually the easiest. It is definitely the cheapest way to quickly expand your planting options. The Tennessee Valley Wild Ones’ Certificate in Native Plants (CNP) program features 2 hands- on propagation classes each year.

d. Inspecting and planting potted plants. Containerized plants-- whether tree, shrub or perennial—may be planted at any time, but of course will require much more water and careful attention in hot weather. Fall is the best time to plant these plants, as the roots will grow over winter in temperatures over 40 degrees F, giving each plant nearly a

year's root growth by spring. Spring is when more plants are available for sale, but the roots will not be well established before hot weather arrives.

- Many potted plants arrive moderately- to- excessively root bound— i.e., when the roots growing to conform to the shape of the pot. These pot bound roots have to be broken apart, cut ruthlessly and freed from their unnatural shape. Nature is not symmetrical.
- After cutting and planting, water immediately and consistently, depending on heat, every day or so just after a strong root pruning (even twice a day in very hot weather). If you do a severe root pruning,
 - Perennials: you may need to cut back soft perennial stems, about halfway, as the reduced, damaged roots will not be able to support the original plant tissue. Or, you could wait and see if the soft stems or leaves wilt.
 - Leave as much shrub and tree growth as possible so that these larger plants can photosynthesize and make food to grow their roots. The plant will gradually recover, as its stems and leaves resume their natural shape (not drooping).
- All potted plants need more water as the potting soil is drier than the native soil they'll be planted in. See more watering guidance below.

e. Planting hole. Dig holes 2 -3 times the size of any given rootball. The harder, more clay-like the ground, the more important it is to make a larger hole and break up the clay into loose, crumbly fill. This is more easily accommodates tiny new root hairs. **Do not amend any backfill, especially for shrubs or trees: they and most native plants do much better in natural, native soils.** We do not advise soil amendments of any type, nor the use of fertilizers, except for identified problems.

f. Mulch new plants to preserve moisture and put organic materials into the soil. As the garden matures ground covers and smaller plants may occupy this zone, but mulch is a good first step for initial planting. Any organic mulch is fine.

g. Planting times. The best time to plant is fall. Roots below the frost line will grow some underground all winter and give plants a significant boost as they emerge in spring. Next best time is as early in spring as possible to allow plants to establish root systems before taxed by hot weather. However, plants can and are planted at any season if the gardener is willing to provide the extra water and attention required.

- Bare root plants must be planted in cool season, usually winter.
- Transplants have the best chance in fall, but with constant water can survive most other seasons. *Old gardeners say 'keep 'em wet'; this is often successful.*
- Expect to water new plants 'until established.' This will vary by season, size of plant, rainfall, and type of soil. For new/young plants, stay ahead of signs of wilting. Generally, in average soils, perennials will establish in 2- 4 months; shrubs in 6- 12 months, and trees in 2-3 years. Extreme weather conditions will

effect this. Learn the dry and wet times NORMALLY expected in your region (September- October are historically our driest months). Established, mature plants should readily survive NORMAL conditions, even those normally dry cycles. Different gardeners have different tolerance for how much water they will apply. The general rule for most *established* plants is 1 inch water/week.

- Sourcing 'clean', i.e. pesticide- free plants, is currently difficult. We all struggle with this. Ask questions from your sources; most commercial horticulture are currently using neonicotinoid systemic pesticides.

V. CONCLUSION: We hope this introductory document is of use to you. Last advice from She-Who-Compiles-It is, HAVE FUN. Go with what delights you. Be weird. Inject your personality with reckless abandon. Take risks. Make mistakes: YOU CAN ALWAYS CHANGE THEM, MOVE THEM, REDO IT YET AGAIN! You will see rewards very quickly, within a few months, when you garden this way. I conclude with this quote from Thomas Merton, "To garden is to engage with the deepest mysteries of the universe." Go, and be cosmic.

Compiled by Lisa Lemza,
Tennessee Valley Chapter Wild Ones,
"Saving the Earth one yard at a time."

May, 2020

Eager

Above the snow, a single maple holding forth
its dying flame. Among the feats of Nature:
the wild
greening from dry bulb, sour alchemy of rot, a rusty
handprint of lichen;
the eager
space-seeking species springing up after fire,
as though they took no lesson from destruction
but to begin again, twice as joyful.

Poem: "Eager" by Kim Garcia, from *Madonna Magdalene*.

RESOURCES: This is difficult to list due to constant changes. Some are better than others, some are more oriented to scientists than lay persons. Some general recommendations:

1. **Tennessee Valley Chapter Wild Ones** has many locally vetted plant lists and resources: <https://tnvalleywildones.org/>

-- TVWO also has a formal organizational page and an informal group page on Facebook; many plant ids occur on the latter. See

<https://www.facebook.com/wildonestennesseevalleychapter/>

<https://www.facebook.com/wildonestennesseevalleychapter/>

The Chapter also has a twitter account.

2. Also, **National Wild Ones'** web site offers a list of garden blogs that may be helpful. However, as of this time there are none for the southeast. Plants that do well in the Midwest and upper Midwest may not thrive in our heat and humidity. See

<http://www.wildones.org/resources/native-plant-blogs/>

3. **Plant identifications:** good places to start are

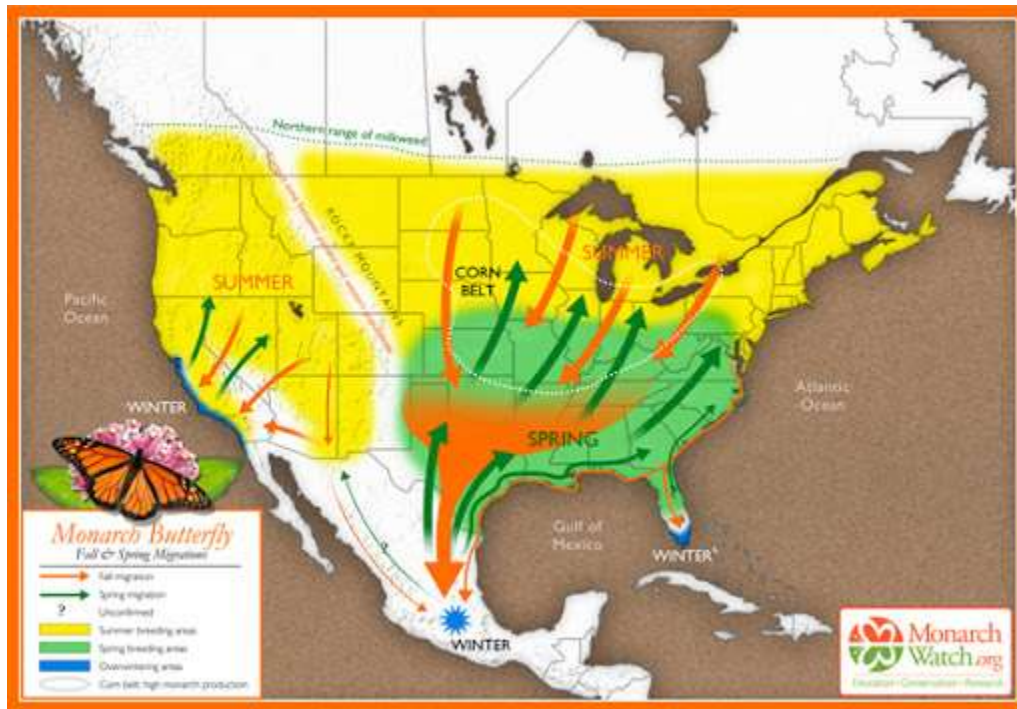
-- Tennessee Native Plant Society's book Wildflower's of Tennessee, Ohio Valley and the Southern Appalachians: <https://www.amazon.com/Wildflowers-Tennessee-Valley-Southern-Appalachians/dp/1551054280>

--Also, Wildflowers of Tennessee by Jack B. Carman:

<https://www.amazon.com/Wildflowers-Tennessee-Jack-B-Carman/dp/0970841809>

4. **On Monarch butterflies.** These iconic pollinators are, among many others, highly threatened as their populations collapse from habitat loss and the combined impact of residential and commercial pesticide use. They, and several other butterfly species (Gulf fritillaries, Sulphurs) migrate each fall, and here in southeast Tennessee you will see their numbers swell then. It's important to have both pollen available for adults and larval food for caterpillars. See these sites specific to the monarch:

- Monarch Watch. <http://www.monarchwatch.org/> Be advised many milkweed species are quick spreaders, into places you might not approve.
- Monarch Waystation. <http://www.monarchwatch.org/waystations/>



5. **On bees and Insects:** Many others, but here's a good start.

- Heather Holms book, "Pollinators of Native Plants."
- Rita Venable book, "Butterflies of Tennessee."
- Xerces Society for Invertebrate Protection Web Site, Many fact sheets, blogs, and guides.

6. **Gardening for wildlife:** If you were a bird or butterfly flying over your property, what would you see from the top down? Consider your area from an overhead, 'google earth' type view. Would you find food? Water? Shelter? Sites to reproduce? How can you alter this property to provide those things?

- The National Wildlife Federation has sponsored long standing home habitat certifications for residences, schools, business and churches to certify as 'backyard wildlife habitat.' They have much helpful information, guides, and blogs at nwf.org. They also have an excellent plant finder database by zip code. See <https://www.audubon.org/>
- Audubon Society has done the same, more focused on birds. They also have a good plant database by zip code. <https://www.audubon.org/>
- Tennessee Smart Yards by the UT Institute of Agriculture has a good native plant database at <https://ag.tennessee.edu/tnyards/Pages/The-Benefits-of-Native-Plants.aspx>

- The web site for the National Garden Clubs also offer helpful advice at <http://www.gardenclub.org/projects/backyard-wildlife-habitat.aspx>
- Cornell Laboratory for Ornithology, “Gardening for Birds”, http://www.birds.cornell.edu/AllAboutBirds/notes/BirdNote13_Gardening.pdf
- Many good amphibian sites, including Froglife: www.froglife.org
- Tennessee Native Plant Society. A list of organizations at <http://tnps.org/resources.html>
- Tennessee Invasive Plant Society at <https://www.tnipc.org/>
- Native plant information databases are many: USDA at <https://plants.sc.egov.usda.gov/java/> and Ladybird Johnson Wildlife Center, <https://www.wildflower.org/plants/> . Many of us locally have found the Missouri Botanical Gardens Plant Finder easy to use, at <https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>