

“Go Native When You Go Green!”
Consider Replanting Northwest Arkansas with Native Trees and Shrubs
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“General Sherman” – World’s Largest Tree – Sequoia National Park

WITH ADVERSITY COMES OPPORTUNITIES!!

Northwest Arkansas’ massive ice storm of January 2009 created untold havoc on the everyday life of all who lived in its path. Unprecedented power outages, automobile accidents, and structural damage to homes and businesses that coincided with an already ominous economic time made the old “Murphy’s Law” metaphor a reality that imposed itself as a fact of life. The green culture of the region awoke in a state of shock to see 150-year old trees damaged beyond resuscitation, and behemoth piles of limbs and debris that lined the streets, having only small openings at driveways. This created hardships for most everyone in some form or fashion, and served as living proof that nature has its own way of doing things.

Optimists look for the good things that come out of catastrophic events. In particular, many of the trees that were damaged were non-native species. One of my archenemies of the plant kingdom is the Bradford pear tree. To me, Bradford pears are the tall fescue of the tree world. Fortunately, they do not survive well in ice storms, and many became shattered heaps of rubble after the big event. Perhaps this frozen hell was the “*Perfect Storm*”.

No doubt, the socially accepted Bradford’s grow fast, have beautiful spring blossoms, and bright fall foliage. Those who plant them have good intentions, thinking “*This must be a good thing that I am doing in my effort to be green!*” The fact of the matter is that planting non-native species can cause an adverse impact to local ecosystems. It perpetuates the process that continues to rob them of the character they exhibited 150 or more years ago, and even fast-forwards certain ecosystems toward endangerment. Granted, many of the Bradford’s and other non-natives will be replaced in the wake of the ice storm. Hopefully, this time around the area’s armchair arborists can make educated selections to slow the pace of the deleterious process by replanting with native species wherever practicable.

THE DANGERS OF NON-NATIVE SPECIES

Globally, the history of plant domestication dates as far back as 8,500 to 9,000 BC in Asia in the form of fig trees and grain crops. In North America, maize corn was introduced from Mexico around 950 AD, several hundred years after the spear was replaced with the bow and arrow. Propagation of varieties of pumpkins, beans, and squash were also cultivated as a mainstay of native cultures. During the last three centuries, thousands of plant species have been introduced into to North America. Some were intentionally brought here for medicinal, ornamental, or food value while others were inadvertently introduced from soils, crop seed, or vessel ballasts brought from another land. Most came from other continents, but a few have spread from other parts of the U.S.

Research has shown that approximately 50,000 species of plants and animals have been introduced into the United States. Exotic, invasive species are a major threat to food and fiber production and cause more than \$100 billion annually in losses and damage. It is anticipated that the introduction, spread, and impact of invasive species will increase with globalization and climate change, continuing to pose a threat to biodiversity, habitat quality, and ecosystem stability.

Ecologist Jim Miller, Ph.D., is one of the foremost authorities on non-native plants in the South, and conducts research at the U.S. Forest Service Southern Research Station. He has identified the invasive plant species he believes pose the biggest threats to southern forest ecosystems . According to Miller, Cogongrass, tallotree, Japanese climbing fern, tree-of-heaven, and nonnative privets are among the fastest moving and most destructive nonnative plant species in the South that will cause significant financial and ecological threats to southern forests in 2009. Miller has worked with Forest Inventory and Analysis (FIA) scientists to develop maps showing the county-by-county spread, across the Southeast of more than 30 of the most serious non-native plant species. These maps can be found online at: <http://www.invasive.org/fiamaps/percent.cfm>. Locally, there is an increasing concern with invasive non-native plant species threatening Arkansas forests. In particular, Japanese honeysuckle is public enemy number one when it comes to non-native plants that are taking over parts of the Natural State. It can produce vines that can climb 30 feet high or more into trees.

Non-native seeds can be spread by wildlife; by attachment to, and release from, clothing of humans; and by tractors and mowers used in multiple locations without being cleaned before being moved to the next site. The consequences are that non-native species often out-compete native forest plants and can degrade forest productivity, wildlife habitat, recreational values, and water quality and create wildfire risks

February 22-27, 2009 was National Invasive Weeds Awareness Week, and the annual conference was held in Washington, DC, as sponsored by the North American Weed Management Association (<http://www.nawma.org/>). I attended this conference in 2006, not long after the ravaging effects of Hurricane Katrina. It was discussed in the conference that the massive rescue effort by the U.S. military from across the country would inadvertently spread invasive plant seeds and plant material that hitch-hiked on vehicles traveling back to their home bases since there was no running water to clean the vehicles prior to their departure. Until that time, I had never thought of how a hurricane in the Gulf could cause the spread of invasive plants in the Mid-West, but it happened.

WHY PLANT NATIVE SPECIES?

We each have a choice when it comes to selecting the species of trees and shrubs that we want to plant. Trees, shrubs, forbs and grasses commonly used for landscaping can easily impact surrounding wild lands. This is especially true in northwest Arkansas where many home sites are interspersed with native woodlands and other natural areas. Many aggressive non-native plantings can easily invade natural communities where they eventually reduce the density of native trees, shrubs, grasses and forbs, along with the birds and other animals dependent on them. In some cases, the native species are unable to compete against very invasive non-native species. This impairs the natural repatriation of the native plants, and eventually the non-natives can become the community dominants and compromise the ecological integrity of local natural areas.

Some individuals have the assertion that planting non-native species adds to the diversity of available wildlife habitat. However, a tenet of genetic conservation of native ecosystems does not provide evidence to support the planting of non-native species. Consequently, non-native plantings increase the rate of environmental change and compound pressures on woodland, wetland, and prairie ecosystems rather than enhance their resilience.

Over the next century, among the greatest threats to our native plants and the wildlife species that depend upon them (some of which are rare or endangered) may very well come from non-native plants. Many non-natives appear to be well behaved and seldom penetrate natural areas. However, there are several hundred that face no natural controls and are highly invasive, being able to out-compete and gradually displace our native plants, well into age-old established forests and undisturbed ecosystems. Though many of the introduced plants are popular, even beloved, landscape plants, it is apparent that they pose a threat to our environment by significantly reducing the number of plant and animal species on any site they invade. If you cannot effectively contain these plants within your property by clipping seeds, fruits, or runners, PLEASE CONSIDER REMOVING THEM. This is invariably a difficult decision. Yet, each of us has a responsibility not to damage the local ecosystem that cleans our air and water, stabilizes the soil, buffers floods, and provides food and shelter for innumerable species besides our own.

I strongly encourage the planting of native species (plants that have grown in this region of the country for hundreds or thousands of years) because these plants are best adapted to the local climate, hydrology, and soils and are well received by native wildlife and birds which use them for food, protective cover, and nesting sites. These species are best suited to provide essential ecological benefits, such as enhancing soils and fostering diverse and healthy natural communities. At the top of the list of advantages of native grasses, forbs, trees, and shrubs over non-native species (such as exotic conifers) are:

- Maintains local landscape natural heritage and conservation value.
- Supports a wider range of plants and animals than introduced species (e.g. oak, willow and river birch all support over 200 native insect species, compared to 19 present on larch).
- Produces more sustainable economic benefits, whether from quality hardwood timber or as a multitude of coppice wood and non-timber forest products.
- Improved stormwater management
- More natural diversity and ecologically functional landscapes
- Possible tax incentives.

Other benefits are shown in the attached summary of a study that compared cost and maintenance issues associated with traditional (non-native) versus sustainable (native) landscape plantings. The results are compelling and favor the planting of natives. The following is an excerpt from a study based on the landscape features required for a 10-acre corporate landscape, excluding site amenities such as hardscapes and augmented aesthetic programs. All costs are provided in 1999 U.S. dollars, based upon estimated values determined by Conservation Design Forum, Inc., 324 N. York, Elmhurst, IL 60137.

SUSTAINABLE VS TRADITIONAL LANDSCAPE MAINTENANCE COSTS

Activity/Year	Sustainable Landscape (Annual Cost)	Traditional Landscape (Annual Cost)	% of Difference Sustainable/Traditional
Up Front Installations			
Traditional landscape require a wider spectrum of landscape treatments, so their up from investment is necessarily greater than that for a new native landscape.			
Design	\$25,000	\$25,000	0%
Construction	\$100,000	\$216,000	52%
Post-Planting Management	\$16,000	\$28,000	43%
Total Up-Front Costs	\$141,000	\$269,000	48%
Annual Long-term Management			
In a new native landscape, the first 4-5 years are fairly intensive inasmuch as a balance is being established between the native and non-native plants. After approximately 5 years the system begins to set into its own internal self-renewing capacities, needing only the addition of increased species richness in areas where annual monitoring dictates.			
In a traditional landscape, the frequency and intensity of mowing, sod-maintenance, weeding, and early plant replacement initially keeps costs in the same general area as the new native landscape. After about 5 years, the stresses of herbicide application, shrub and tree mortality, and other aging syndromes of a landscape that does not renew itself results in a greater maintenance costs than for sustainable landscapes.			
Year 1	\$19,000	\$33,000	42%
Year 2	\$32,000	\$33,000	3%
Year 3	\$17,000	\$33,000	49%
Year 4	\$30,000	\$33,000	9%
Year 5	\$15,000	\$33,000	55%
Year 6	\$13,000	\$30,000	43%
Year 7	\$5,000	\$30,000	83%
Year 8	\$13,000	\$30,000	43%
Year 9	\$5,000	\$30,000	83%
Year 10	\$13,000	\$30,000	43%
Ten-year Totals	\$162,000	\$315,000	52%
Year 11+	\$5,450	\$40,000	86%
Subsequent Years	\$5,450	\$30,000	82%

The figures above are a decade old and more research has been done since that time to develop an achievable approach to sustainable landscaping with native plants. Additional information is available on the USEPA website listed below. This website also has a brochure and a video about landscaping with native plants.

<http://epa.gov/greenacres/wildones/index.html>

In summary, the lesson to be learned is that any time we affect living organisms at the bottom of food web, we may be having an adverse impact on organisms at the top of the food web including our own kind. Today's definition of "natural" is oftentimes anything but natural. I have seen areas overgrown with plants such as callery pears, Japanese honeysuckle, and/or sericea lespedeza and heard landowners say, "I am letting this area stay *natural* so I do not disturb anything there." Our world has become so disturbed with non-native species that the generations living today may not be able to recognize what is actually *natural* and they leave the non-native invasive plants alone. This only exacerbates the non-native invasion process and a part of our natural heritage becomes that much closer to being lost. I assure you, the aforementioned thicket of non-natives looked much different before the introduction of the green villains. Just because it is green does not necessarily mean that it is good for our local ecosystems.

IMPLEMENTATION PLANTATION!!!!

As the communities of Northwest Arkansas develop and implement Green Infrastructure improvements, public acceptance becomes a critical issue during frightful economic conditions. A strategy for the endorsement of native species must be economically feasible and sustainable in order to gain public support. Many studies indicate that environmental improvements can be realized because many native plants are hardy since they are adapted to the local conditions; and once established, they do not need the intensity and cost of pesticides, fertilizers, or watering required by many traditional landscape plants. Consequently, there are often lower maintenance costs in the long run. Much effort is needed for public education in this arena to provide guidance to those willing to participate. Education is needed for community decision makers as well so that local codes and ordinances can be developed to promote the use of natives, and more importantly, prohibit the use of specific highly invasive non-natives. As a starting point, the *Model Native Plant Landscape Ordinance Handbook*, developed by the Florida Native Plant Society can be found at:

http://www.fnps.org/committees/fnps/pdfs/fnpsfnps_landscape_ord_0224071.pdf.

I am by no means suggesting that the cities of Northwest Arkansas should develop this prescription ala carte, or that only native plants should be allowed. What I am suggesting is to take the idea of a native plant ordinance to the City of Fayetteville's Tree and Landscape Advisory Committee. Their role will be to assist in determining policies for "what" and "where" to plant, or not to plant, natives or non-natives, and which species should absolutely be prohibited in the community. This advisory group can massage the model landscape ordinance I will provide to develop cost-effective land stewardship recommendations for private landowners and for publicly owned land, whether it is a park, a trail system, or a parkway. Perhaps this will some day allow us to arrive at a point where we do not waste taxpayer dollars planting a Bradford pear or a blue spruce with the "If it dies, we will simply replant it" mentality. It will also lend some relief to native plant communities that can actually become severely altered, due to competition from non-natives.

Likewise, any native plant species may not be appropriate for every situation. Some natives, such as sycamore and green ash can be very invasive. Therefore, they should be avoided in areas where wet prairies and/or marshes are maintained. Likewise, natives such as cottonwood and box elder are composed of weak wood and may not be good choices for along streets or near power lines. There are also some non-natives that can enhance urban views cape without being invasive into natural areas, although they may not be the tree of choice for riparian restoration projects. A helpful guide, entitled *Landscape Trees for Specific Uses - FSA-6126*, published by the University of Arkansas Cooperative Extension Service can be found at:

http://www.uaex.edu/Other_Areas/publications/PDF/FSA-6126.pdf

MATCH THE PLANT TO THE SITE

In deciding what and where to plant, match the tree/shrub species to the wetness/dryness of the area, as designated by each species hydrological indicator status. For instance, upland plants may not do well in wet areas so evaluate your site before you select the appropriate species to plant. It is important to first do your homework in selecting the appropriate species for your site, and avoid viewing the list as a smorgasbord from which you can choose.

The "Hydrological Indicator Status" of any given plant species indicates the range of estimated probabilities (expressed as a frequency of occurrence) that a species occurs in wetlands versus uplands across the entire distribution of the species. As an example, a frequency of 67%-99% (Facultative Wetland) means that 67%-99% of sample plots containing the species randomly selected across the range of the species would be wetland. A positive (+) or negative (-) sign is used with the Facultative Indicator categories to more specifically define the regional frequency of occurrence in wetlands. The positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands), and a negative sign indicates a frequency toward the lower end of the category (less frequently found in

wetlands). A question mark (?) following an indicator denotes a tentative assignment based on the botanical literature and not confirmed by regional review. The table below further describes the hydrological indicator codes for plant species, and the probability of their adaptation to wet/dry areas.

Caution should be given to plant species selection based upon the indicator code and consideration should be given to the degree of “wetness/dryness” of the planting area. For example, a “Facultative” species may equally occur in wetlands and uplands, but this does not necessarily mean that it will thrive in a marsh that has year-round inundation. Likewise, some obligate wetland plants can grow in areas that are wetlands that may become dry seasonally.

PLANT INDICATOR STATUS CATEGORIES

Indicator Code	Hydrologic Type	Probability of Adaptation to Wetness/Dryness
UPL (arid)	Obligate Upland	Almost always occurs (estimated probability 99%) in nonwetlands under natural conditions.
FACU (dry)	Facultative Upland	Usually occurs in nonwetlands (estimated probability 67%-99%), but occasionally found on wetlands (estimated probability 1%-33%).
FAC (mixed)	Facultative	Plants with a similar likelihood (estimated probability 33 percent to 67 percent) of occurring in both wetlands and nonwetlands.
FACW (moist)	Facultative Wetland	(Includes FacW+ and FacW-) Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in nonwetlands.
OBL (wet)	Obligate Wetland	Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1 percent) in nonwetlands.
NA	No agreement	The regional panel was not able to reach a unanimous decision on this species.
NI	No indicator	Insufficient information was available to determine an indicator status.
NO	No occurrence	The species does not occur in that region.

PURPOSE OF LIST

Although the introduction focuses on replanting Northwest Arkansas with native species, this list is also intended to be a guide in identifying native versus non-native species. Due to an increase in local ecological restoration projects, this write up may also be used as an aid for not only "what to plant", but to help in understanding which species may need to be controlled. In summary, it's about what to plant; what not to plant; what to control; and what to protect. Some may find this list difficult to use because it may be too technical for the average lay person. However, with a little homework, many can select the plant species that suit their site in no time. The USDA Plant Database is a very helpful website that can be viewed at:

<http://plants.usda.gov/>

For most plant species, the website provides photos, Plant Guides, and Fact Sheets. You can search by common or scientific name. For most species, it gives you detailed information and photos, and for many it will have propagation protocols from the Native Plants Network, Fact Sheets and Plant Guides. You can scroll down to the map of the US to see if it is native to Arkansas. If so, click on Arkansas and it will show you the county distribution for the species. This may not necessarily mean that the species is native to Arkansas. Be sure and click the “Native Status” to find out whether or not it is an introduced species.

You do not have to be a full-fledged botanist to at least read the adverse effects of non-natives in this publication and choose a northern red oak instead of a white mulberry the next time you go to the nursery. If this list still seems too complicated for you, a more user-friendly brochure entitled “The Ozark Friendly Landscape” brochure is available at:

<http://ozarksalive.org/OzarkFriendlyBrochure.pdf>

SOURCES OF NATIVE PLANTS

Whenever possible, you should avoid purchasing cultivars when acquiring native plants or seeds. I encourage purchasing local genetic (“local ecotype”) stock when available. The genetic stock should be chosen to provide typical forms of the native species and include the capacity to bear fertile fruits. Obtaining plant material from within the general area, plant hardiness zone, and from similar local habitats with regional genetic origin will be most desirable. A general rule of thumb to follow is to select plants with a genetic origin that is limited to the geographical boundaries not to exceed a distance of 250 miles east or west of the planting site, or exceed a distance of 100 miles north or south of the planting site, if possible. Please double check before you buy, as any given nursery may stock plants that are not native to Arkansas.

One Arkansas nursery is:

Pine Ridge Gardens 832 Sycamore Road, London, AR 72847 Phone (479) 293-4359 e-mail: office@pineridgegardens.com

You can visit their website at [Pine Ridge Gardens](#) to get their online catalog

Other nurseries include:

<http://www.pittmannursery.com/> Magnolia, AR online catalog

Ah, Ah, Ah! I see you eyeballing that golden rain tree! Don’t even think about it! Order something NATIVE!! Get a redbud or a flowering dogwood!

Forrest Keeling Nursery, Elsberry, MO

<http://www.fknursery.com>

You can purchase bare root tree seedlings online from the Arkansas Forestry Commission (AFC) at: http://www.forestry.state.ar.us/seedlingsales_new.htm

The AFC propagates native plants at the Baucum Nursery located east of Little Rock. You will need to order dormant rootstock for planting prior to the spring green up. You can specify delivery of your order to the AFC District office near Garland and I-540 in Fayetteville. They have a cooler where your seedlings will be kept dormant until you pick them up for planting. You can buy seedlings at a very economical price!

BENTON AND WASHINGTON COUNTY NATIVE WOODY PLANT SPECIES LIST

Arkansas supports approximately 200 species of native trees. Considering the many hybrids, the total approaches 300. The Natural State has a significant percentage of the nearly 1,200 different trees recognized for the United States. As listed below are trees and shrubs that have been historically native to northwest Arkansas, and/or statewide. It is not an all-inclusive comprehensive list, but includes the majority of the species found in Washington and Benton Counties (List compiled based on *Trees, Shrubs, & Vines of Arkansas* by Carl G. Hunter) with additional information provided, and/or reviewed, by provided by Theo Witsell, Patti Erwin, Greg Howe, and Sarah Patterson).

UPLAND (UPL) AND FACULTATIVE UPLAND (FACU) NATIVE TREES, SHRUBS, AND VINES

Botanical Name	Common Name	Hydrological Indicator
UPL, FACU TREE SPECIES		
<i>Acer saccharum</i>	sugar maple	FACU-
<i>Carya ovata</i>	shagbark hickory	FACU
<i>Celtis occidentalis</i>	common hackberry	FACU
<i>Cercis canadensis</i>	eastern redbud	FACU
<i>Cornus florida</i>	flowering dogwood	FACU
<i>Corylus americana</i>	American hazelnut	FACU
<i>Juglans nigra</i>	black walnut	FACU
<i>Juniperus virginiana</i>	eastern red cedar** ¹	FACU-
<i>Maclura pomifera</i>	Osage orange, horse-apple, BoisD'Arc	FACU
<i>Ostrya virginiana</i>	hophornbeam	FACU
<i>Prunus americana</i>	American plum	FACU-
<i>Prunus serotina</i>	black cherry** ¹	FACU
<i>Quercus alba</i>	white oak	FACU
<i>Quercus falcata</i>	southern red oak	FACU-
<i>Quercus marilandica</i>	blackjack oak	UPL
<i>Quercus rubra</i>	northern red oak	FACU
<i>Quercus stellata</i>	post oak	FACU
<i>Quercus velutina</i>	black oak	UPL
<i>Sassafras albidum</i>	sassafras	FACU
<i>Ulmus alata</i>	winged elm** ¹	FACU+
UPL, FACU SHRUB SPECIES		
<i>Aesculus glabra</i>	Ohio buckeye	FACU
<i>Dirca palustris</i>	eastern leatherwood	FACU-
<i>Frangula (Rhamnus) caroliniana</i>	Carolina Buchthorn	FACU
<i>Hamamelis vernalis</i>	Ozark witchhazel	FACU
<i>Hamamelis virginiana</i>	American witchhazel facu	FACU
<i>Hypericum prolificum</i>	shrubby St. Johnswort	FACU
<i>Rosa carolina</i>	Carolina rose	FACU
<i>Rubus argutus</i>	highbush blackberry	FACU+
<i>Salix humilis</i>	prairie willow	FACU
UPL, FACU VINE SPECIES		
<i>Rosa setigera</i>	climbing rose,	FACU
<i>Rubus flagellaris</i>	northern dewberry	UPL

**¹ Can be invasive in prairies; will readily emerge as volunteers without planting

FACULTATIVE (FAC) (INCLUDES FAC+, FAC-) NATIVE TREES, SHRUBS, AND VINES

Botanical Name	Common Name	Hydrological Indicator
FAC, FAC+, FAC- TREE SPECIES		
<i>Acer rubrum</i>	red maple	FAC
<i>Amelanchier arborea</i>	common serviceberry	FAC-
<i>Aralia spinosa</i>	devil's walking stick	FAC
<i>Asimina triloba</i>	pawpaw	FAC
<i>Carpinus caroliniana</i>	blue beech, American hornbeam	FAC
<i>Carya cordiformis</i>	bitternut hickory	FAC
<i>Carya illinoensis</i>	pecan	FAC+
<i>Cornus drummondii</i>	roughleaved dogwood	FAC
<i>Diospyros virginiana</i>	common persimmon** ¹	FAC
<i>Gleditsia triacanthos</i>	honey locust	FAC-
<i>Liquidambar styraciflua</i>	sweetgum ** ²	FAC+
<i>Morus rubra</i>	red mulberry	FAC
<i>Nyssa sylvatica</i>	black gum	FAC
<i>Ptelea trifoliata</i>	water ash, hop tree	FAC
<i>Populus deltoides</i>	eastern cottonwood	FAC+
<i>Quercus macrocarpa</i>	bur oak	FAC
<i>Quercus muehlenbergii</i>	chinkapin oak	FAC
<i>Ulmus rubra</i>	slippery elm	FAC
<i>Ulmus thomasii</i>	rock elm, cork elm	FAC
FAC, FAC+, FAC- SHRUB SPECIES		
<i>Amorpha nitens</i>	shining indigo bush	FAC
<i>Crataegus crus-galli</i>	cockspur hawthorn	FAC-
<i>Euonymus americanus</i>	bursting heart, strawberry bush	FAC
<i>Euonymus atropurpureus</i>	burningbush wahoo	FAC
<i>Ptelea trifoliata</i>	water ash, hop tree	FAC
<i>Rhododendron prinophyllum</i>	mountain azalea	FAC
<i>Ribes odoratum</i> var. <i>villosum</i>	golden currant	FAC-
<i>Staphylea trifolia</i>	American bladdernut	FAC
<i>Symphoricarpos orbiculatus</i>	coralberry	FAC-
<i>Viburnum dentatum</i>	Southern arrowwood	FAC
FAC, FAC+, FAC- VINE SPECIES		
<i>Ampelopsis arborea</i>	pepper vine	FAC+
<i>Ampelopsis cordata</i>	false grape	FAC+
<i>Aristolochia tomentosa</i>	pipe vine, Dutchman's Pipe	FAC
<i>Campsis radicans</i>	trumpet creeper	FAC
<i>Cissus incisa</i>	marine vine, sorrelvine	FAC
<i>Cocculus carolinus</i>	Carolina coralbead	FAC
<i>Dioscorea villosa</i>	wild yam	FAC
<i>Lonicera sempervirens</i>	trumpet honeysuckle	FAC
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	FAC
<i>Rubus trivialis</i>	Southern dewberry** ³	FAC
<i>Vitis aestivalis</i>	summer grape	FAC-
<i>Vitis cinerea</i>	grayback, winter, grape	FAC+

**¹ Can be invasive in prairies; will readily emerge as volunteers without planting, depending upon site hydrology.

**² Can be invasive in forested areas.

**³ Can be invasive in lawns and will readily emerge as volunteers without planting, depending upon site hydrology.

FAC, FAC+, FAC- VINE SPECIES - CONTINUED		
<i>Vitis rotundifolia</i>	muscadine	FAC
<i>Vitis vulpina</i>	frost grape	FAC+
<i>Smilax bona-nox</i>	greenbrier, bullbrier**2	FAC
<i>Smilax glauca</i>	cat greenbrier**2	FAC
<i>Smilax rotundifolia</i>	common greenbrier**2	FAC
<i>Smilax tamnoides var. hispida</i>	bristly greenbrier**2	FAC+
<i>Toxicodendron radicans</i>	poison ivy	FAC

**2 Can be invasive in forested areas.

OBLIGATE (OBL) AND FACULTATIVE WETLAND (FACW) (INCLUDES FACW+, FACW-) NATIVE TREES, SHRUBS, AND VINES

Botanical Name	Common Name	Hydrological Indicator
OBL, FACW, FACW+, FACW- TREE SPECIES		
<i>Acer negundo</i>	box elder, ash-leaved maple	FACW
<i>Acer saccharinum</i>	silver maple	FACW
<i>Alnus serrulata</i>	hazel alder	FACW+
<i>Betula nigra</i>	river birch	FACW
<i>Celtis laevigata</i>	sugarberry	FACW
<i>Fraxinus pennsylvanica</i>	green ash**1	FACW
<i>Platanus occidentalis</i>	sycamore**1	FACW-
<i>Quercus shumardii</i>	Shumards Oak	FACW-
<i>Salix nigra</i>	black willow	OBL
<i>Ulmus americana</i>	American elm**1	FACW
OBL, FACW, FACW+, FACW- SHRUB SPECIES		
<i>Amorpha fruticosa</i>	false indigo	FACW
<i>Arundinaria gigantea</i>	giant cane	FACW
<i>Cephalanthus occidentalis</i>	buttonbush, globe flower	OBL
<i>Ilex decidua</i>	deciduous holly possum haw	FACW-
<i>Lindera benzoin</i>	Northern spicebush	FACW
<i>Rhododendron viscosum</i>	Texas azalea	FACW
<i>Salix caroliniana</i>	coastal plain willow	OBL
<i>Salix eriocephala</i>	rigid willow	FACW
<i>Salix interior</i>	sandbar willow	OBL
<i>Sambucus canadensis</i>	common elder-berry	FACW
OBL, FACW, FACW+, FACW- VINE SPECIES		
<i>Berchemia scandens</i>	supple-jack, rattan vine	FACW
<i>Calycocarpum lyonii</i>	cupseed	FACW-
<i>Vitis riparia</i>	riverbank grape	FACW
<i>Wisteria frutescens</i>	American wisteria **2	FACW

**1 Can be invasive in prairies; will readily emerge as volunteers without planting, depending upon site hydrology.

**2 Can be invasive in forested areas.

NO INDICATOR (NI) NATIVE TREES, SHRUBS, AND VINES (Indicator Status Unknown*)**

Botanical Name	Common Name
NI TREE SPECIES	
<i>Castanea ozarkensis</i>	Ozark chinkapin
<i>Carya texana</i>	black hickory
<i>Cotinus obovatus</i>	American smoketree
<i>Pinus echinata</i>	shortleaf pine
<i>Prunus mexicana</i>	Mexican plum
NI SHRUB SPECIES	
<i>Amorpha canescens</i>	leadplant
<i>Ceanothus americanus</i>	New Jersey tea
<i>Cladrastis kentukea</i>	Kentucky yellowwood
<i>Gymnocladus dioicus</i>	Kentucky coffeetree
<i>Hibiscus lasiocarpus</i>	rose mallow
<i>Juniperus ashei</i>	Ashe's juniper
<i>Prunus angustifolia</i>	Chickasaw plum
<i>Prunus munsoniana</i>	wild goose plum
<i>Rhus aromatica</i>	fragrant sumac
<i>Rhus copallinum</i>	winged sumac
<i>Rhus glabra</i>	smooth sumac
<i>Rubus occidentalis</i>	black raspberry
<i>Ribes missouriense</i>	Missouri gooseberry
NI VINE SPECIES	
<i>Celastrus scandens</i>	American bittersweet
<i>Menispermum canadense</i>	Canada moonseed

*** These species are native to Benton and Washington Counties, however, neither the Corps of Engineers nor the US Fish & Wildlife Service have assigned indicator status designations to them. A little research will need to be done when selecting a site to plant these species. For example, *Juniperus ashei* only grows in very dry areas, whereas *Hibiscus lasiocarpus* grows in very wet areas.

PLANTS NOT TO PLANT: VERY INVASIVE SPECIES THAT SHOULD NEVER BE PLANTED

We've all done it! Anyone who is interested in plants and has half a green thumb has looked at nursery catalogs showing beautiful flowering trees or those that produce fruit or nuts faster than native species and thought, "That would look cool in my yard!" We often have good intentions, and the mentality, "I am planting something and it's green so it's gotta be good, right?" We fail to consider that the impact to the environment from some of these plants may be worse than planting nothing at all.

The following includes an excerpt from a list of non-native invasive plant species compiled by Jude Jardine and Theo Witsell of the Arkansas Native Plant Society. These species are notorious about spreading aggressively to colonize natural areas. Some of the wetland species may have been introduced due the popular trend to establish rain gardens and backyard water features. Others may actually be native species that have the capability of being very invasive. The list also includes grasses and forbs. Please be aware that some of the species below can be incredibly tough and can grow in the poorest conditions. Others are capable of suppressing growth of grass, garden plants, and forest understory beneath, at least as far as the drip-line. Some produce wind-borne seeds that can germinate and grow in deep shade. Certain non-native tree species may be touted in wildlife management publications as "improving the habitat on your property" when they actually spread uncontrollably, displacing indigenous forest trees and ultimately diminishing the overall quality of wildlife habitat. Never plant invasive species in or near natural areas, parklands, or other non-landscaped rural or semi-urban sites. Since birds can carry their seeds long distances, I also caution against planting these species in urban areas. Please do not plant any of these species!

INVASIVE AND/OR NON-NATIVE PLANT SPECIES TO AVOID PLANTING

Botanical name	Common name
<i>Acer platanoides</i>	Norway maple
<i>Ailanthus altissima</i>	tree-of-heaven
<i>Albizia julibrissin</i>	silktree, mimosa
<i>Alliaria petiolata</i>	garlic mustard
<i>Alternanthera philoxeroides</i> (& <i>A. sessilis</i>)	alligator weed
<i>Ampelopsis brevipedunculata</i>	porcelainberry
<i>Baccharis halimifolia</i>	saltbush
<i>Berberis thunbergii</i>	barberry
<i>Bothriochloa bladhii</i>	Caucasian bluestem
<i>Bromus sterilis</i> (& <i>B. tectorum</i>)	cheatgrass
<i>Carduus nutans</i>	nodding thistle
<i>Catalpa speciosa</i>	catalpa
<i>Celastrus orbiculata</i>	oriental bittersweet
<i>Elaeagnus angustifolia</i>	Russian olive
<i>Elaeagnus</i> spp.	autumn/thorny olive
<i>Eragrostis curvula</i>	weeping lovegrass
<i>Euonymus alatus</i>	burning bush
<i>Euonymus fortunei</i>	creeping euonymus
<i>Festuca arundinacea</i>	tall fescue
<i>Hedera helix</i>	English ivy
<i>Holcus lanatus</i>	velvet grass
<i>Hydrilla verticillata</i>	hydrilla
<i>Imperata cylindrica</i>	cogongrass
<i>Lespedeza bicolor</i>	shrubby lespedeza
<i>Lespedeza cuneata</i>	sericea lespedeza
<i>Ligustrum sinense</i> (& <i>L. lucidum</i>)	Chinese privet
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i> (& <i>L. fragrantissima</i> & <i>L. morrowii</i> , <i>tatarica</i> , <i>mackii</i> , etc.)	bush honeysuckle
<i>Lygodium japonicum</i>	Japanese climbing fern
<i>Lythrum salicaria</i>	purple loosestrife
<i>Melia azedarach</i>	Chinaberry tree
<i>Melilotus alba</i> (& <i>M. officinalis</i>)	sweetclover
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Morus alba</i>	white mulberry
<i>Murdannia keisak</i>	Asian spiderwort
<i>Myriophyllum spicatum</i>	Eurasian water milfoil
<i>Nandina domestica</i>	heavenly bamboo, nandina
<i>Polygonum cuspidatum</i>	Japanese knotweed
<i>Quercus acutissima</i>	sawtooth oak
<i>Rhamnus cathartica</i>	common buckthorn
<i>Robinia pseudoacacia</i>	black locust
<i>Rosa multiflora</i>	multiflora rose
<i>Paulownia tomentosa</i>	empress tree, princess tree
<i>Photinia serrulata</i>	redtip photinia
<i>Phragmites australis</i>	giant reed
<i>Poncirus trifoliata</i>	trifoliolate orange
<i>Pueraria montana</i>	kudzu
<i>Pyrus calleryana</i>	callery pear, Bradford pear

INVASIVE PLANT SPECIES TO AVOID PLANTING (CONTINUED)

<u>Botanical name</u>	<u>Common name</u>
<i>Rhamnus</i> spp.)	buckthorn, exotic
<i>Salvinia molesta</i>	giant water spangles
<i>Sapium sebiferum</i>	Chinese tallowtree
<i>Solanum viarum</i>	tropical soda apple
<i>Sorghum halapense</i>	Johnson grass
<i>Sphenoclea zeylandica</i>	chicken spike
<i>Ulmus</i> hybrids	elm hybrids
<i>Ulmus parvifolia</i>	Chinese elm
<i>Ulmus pumila</i>	Siberian elm
<i>Viburnum opulus</i>	European highbush cranberry/guelder rose
<i>Vinca major</i> (& <i>V. minor</i>)	periwinkle
<i>Wisteria sinense</i> (& <i>W. floribunda</i>)	Asian wisteria

For additional listings of “Non-native Woody Plants of Arkansas”, check out:

<http://www.hsu.edu/default.aspx?id=2543>

THE MORAL OF THE STORY

We all have choices to make about selecting plants to stick in the ground. As we stroll through a nursery or a garden center, little do we think that the plant we choose may take away a few meals for songbirds or other wildlife. For example, the introduced white mulberry carries a root disease that is causing many of our delicious native red mulberry to be on the decline. Likewise, the infamous Bradford pear can pollinate other cultivars, spreading rapidly to compete against native plants that provide food and/or habitat value for urban wildlife. So think before you plant, and go native when you go green!

But we do not live in the past. ...

So we begin the only way we are able.

We begin not with what was, but with what is.

And like the wind in the grasses, sometimes the next pass we make is one that mends.

Laurie Allmann, from Far From Tame