

# The Water-Friendly Forest

*"It's a little known fact that fish grow on trees." Anonymous*

## **WHY**

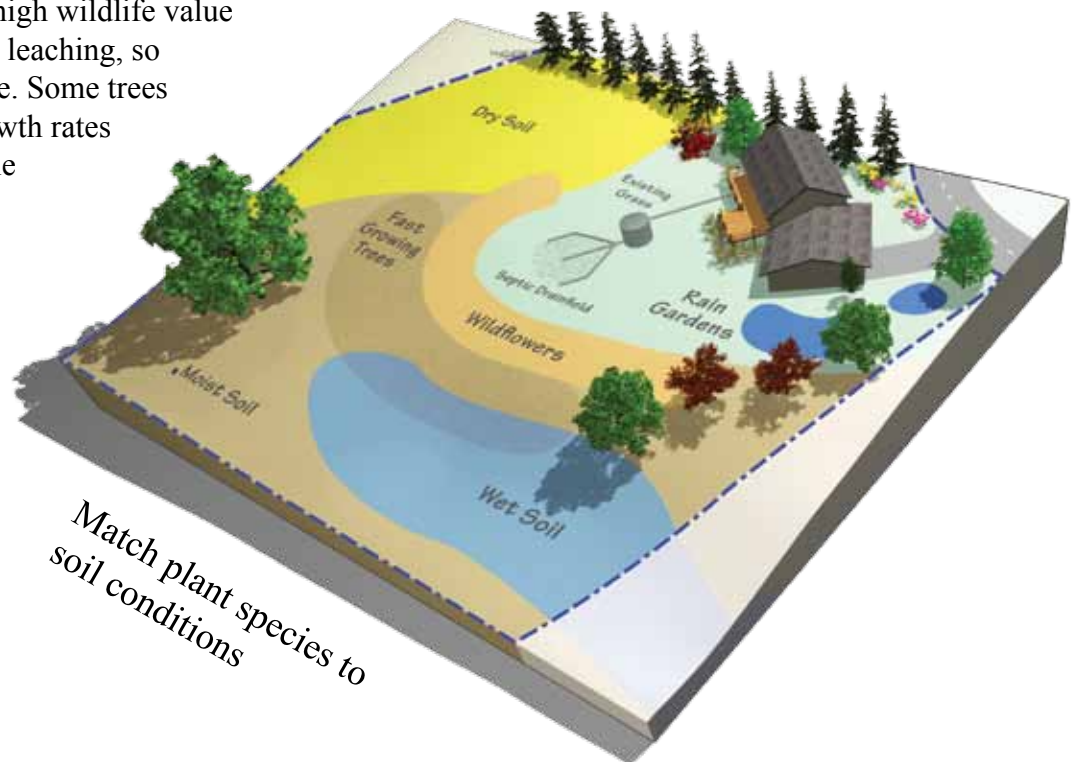
Forests are part of nature's water filter. Forests soak up more water than other land uses, catching rainfall in the canopy and developing more porous soils over time. The forest canopy uses water during the growing season, making more room to store water in the soil during storms. Forests trap and treat nutrients, keeping pollutants out of streams and groundwater. They store carbon to make cleaner air. Septic tanks work well to treat waste to control disease, but most systems do not reduce nutrients well. (Contact MD Dept. of Environment for incentives to install a denitrifying septic system). Planting trees beyond the septic field can help absorb many nutrients before they leach to local streams and groundwater. Add a rain garden to treat rooftop runoff, and rain barrels to capture water for outdoor watering.

## **HOW**

Design an area of fast-growing trees like sycamore or yellow-poplar just beyond a septic tank drain field. A good minimum width is 100 feet wide, with more being needed on steeper slopes. Expand width 4 feet for every 1% slope to compensate for faster water movement on slopes.

Plant densely (400+ seedlings/acre, up to 800 trees per acre). Seedlings are least expensive and if sheltered with tree tubes or deer fencing, can equal or exceed size of trees planted as larger stock within 5 to 7 years. If larger trees are planted, use fewer (100-300 trees/acre). Thin after 10-15 years to encourage larger trees and continued nutrient uptake. Plan on harvesting some of the trees every 30-50 years to encourage rapid new growth. Control invasive weeds by cutting or spraying.

Add trees with more moderate growth rates and longer life spans in surrounding areas. Oaks are native species associated with high wildlife value and low rates of nutrient leaching, so they are emphasized here. Some trees with more moderate growth rates that also provide valuable winter food for wildlife and desirable wood are northern red oak, southern red oak, white oak, and black walnut.



Common name		Latin name	Soil Moisture	Sun preference	Flower color	Fall color	Description	Soil Moisture Preferences:
								<input type="checkbox"/> All <input type="checkbox"/> Dry <input type="checkbox"/> Moderate <input type="checkbox"/> Wet
T r e e s	Pignut hickory	<i>Carya glabra</i>	All	Sun, PS	no	yellow	Nuts for wildlife, attractive foliage, adaptable	
	Northern red oak	<i>Quercus rubra</i>	Dry to mod.	Sun, PS	no	red	Common and relatively fast-growing oak, nice fall color	
	Yellow-poplar	<i>Liriodendron tulipifera</i>	Moderate	Sun, PS	yellow	yellow	Fast-growing, tulip-shaped leaf, yellow flowers in spring	
	Eastern white pine	<i>Pinus strobus</i>	Moderate	Sun, PS	no	evergreen	Soft needles, can shear well	
	American sycamore	<i>Platanus occidentalis</i>	Moderate	Sun, PS	no	yellow	Fast-growing, white exfoliating bark, large tree	
	Bigtooth aspen	<i>Populus grandidentata</i>	Moderate	Sun	no	yellow	Fast-growing, smooth bark	
	Pin oak	<i>Quercus palustris</i>	Moderate	Sun	no	red	Adaptable, relatively fast-growing oak, can tolerate wet soils	
	American basswood	<i>Tilia americana</i>	Moderate	Shade, PS	yellow	yellow/brown	Fragrant flowers, bees like the pollen, moderate growth rate	
	Eastern hemlock	<i>Tsuga canadensis</i>	Moderate	Shade, PS	no	evergreen	Lacy texture, susceptible to hemlock woolly adelgid	
	Slippery elm	<i>Ulmus rubra</i>	Moderate	Shade, PS	no	yellow	If using American elm, get disease-resistant cultivar	
	Silver maple	<i>Acer saccharinum</i>	Wet to mod.	Sun, PS	no	yellow	Fast-growing, short-lived tree, tends to have multiple stems or low branches	
	Yellow birch	<i>Betula alleghaniensis</i>	Wet to mod.	Sun, PS, Shade	no	yellow	Shiny bark for winter interest, prefers some shade, N aspects, limestone soils	
	River birch	<i>Betula nigra</i>	Wet to mod.	Sun	no	yellow	Exfoliating bark, graceful droop to branches, dwarf, 'Heritage', and 'Dura-Heat' cultivars	
	Black-gum	<i>Nyssa sylvatica</i>	Wet to mod.	Sun, PS	no	red	Brilliant red fall color, tolerates some drought, slower-growing	
	Eastern cottonwood	<i>Populus deltoides</i>	Wet to mod.	Sun	no	yellow	Fast-growing, short-lived, smooth bark, cottony seeds	
	Swamp white oak	<i>Quercus bicolor</i>	Wet to mod.	Sun, PS	no	red/brown	Tolerates wet soils	
	Swamp chestnut oak	<i>Quercus michauxii</i>	Wet to mod.	Sun	no	red/brown	Tolerates wet soils	
	Water oak	<i>Quercus nigra</i>	Wet to mod.	Shade, PS	no	no	Tolerates wet soils, leaves persist in winter	
	Willow oak	<i>Quercus phellos</i>	Wet to mod.	Sun, PS	no	red/brown	Adaptable, relatively fast-growing oak, small acorns, thin leaves	
	Black willow	<i>Salix nigra</i>	Wet to mod.	Sun, PS	no	no	Slender flexible twigs, can grow from cuttings/live stakes, tolerates flooding and a little salt	
Bald-cypress	<i>Taxodium distichum</i>	Wet to mod.	Sun, PS	no	no	Fine texture, deciduous conifer, soft graceful foliage, tolerates ponding		
Red chokeberry	<i>Phloxia pyrifolia</i>	All	Sun, PS	white	red	Bright red berries, adaptable to soils		
S h r u b s	Oakleaf hydrangea	<i>Hydrangea quercifolia</i>	Moderate	Sun, PS	white	red/maroon	'Alice' and 'Snow Queen' and 'Vaughn's Lily' are good cultivars, exfoliating winter bark, compact cultivars	
	Hazel alder	<i>Alnus serrulata</i>	Moderate	Sun, PS	no	yellow/red	Multi-stem shrub/small tree, nice winter bark, Nitrogen fixer, forms thickets on streams	
	Burtonbush	<i>Cephalanthus occidentalis</i>	Wet to mod.	Sun, PS, Shade	white	white	White balls of flowers in summer, coarse texture, likes wet feet, tolerates drought	
	Summersweet	<i>Clethra alnifolia</i>	Wet to mod.	Sun, PS	white	white	Upright summer flowers, bees and butterflies like it, 'Ruby Spice' is a pink dwarf cultivar	
	Silky dogwood	<i>Cornus amomum</i>	Wet to mod.	Sun, PS	white	red/purple	Clusters of cobalt blue berries	
	Inkberry	<i>Ilex glabra</i>	Wet to mod.	Sun, PS	no	evergreen	Leaves similar to boxwood, retains shape well	
	Sweetspire	<i>Itea virginica</i>	Wet to mod.	Sun, PS, Shade	white	dark red	Medium size arching shrub, will sucker, dark red winter stems, butterfly and bird plant, dwarf cultivars	
	Marsh mallow	<i>Hibiscus laevis</i>	Wet to mod.	Sun, PS	pink	no	Several color cultivars, generally pink, 3' tall, very wet, bold texture	
	Swamp azalea	<i>Rhododendron viscosum</i>	Wet to mod.	Sun, PS	white	yellow/red	White fragrant late spring flowers, likes the wetter areas of a rain garden	
	Broomseage bluestem	<i>Andropogon virginicus</i>	All	Sun	no	reddish	Bunching grass	
	Deertongue	<i>Dichanthelium ciliatessimum</i>	All	Sun, PS	no	no	Grassy cover	
	Switchgrass	<i>Panicum virgatum</i>	All	Sun	no	varies	Fine texture, clumping, many cultivars for height and color	
	Virginia creeper	<i>Parthenocissus quinquefolia</i>	All	Sun, PS, Shade	no	red	Vine with five-leaved foliage, bank stabilizer, adaptable, trim as needed	
	White snakeroot	<i>Ageratina altissima</i>	Dry to mod.	Sun, PS, Shade	white	no	3' tall, white summer flowers,	
	Christmas Fern	<i>Polystichum acrostichoides</i>	Moderate	Shade, PS	no	evergreen	Evergreen, 12-15" tall clumping fern, ground cover	
	Common boneset	<i>Eupatorium perfoliatum</i>	Moderate	Sun, PS, Shade	no	no	Sprays of white flowers, tolerates wet soils/spring	
	Creeping phlox	<i>Phlox stolonifera</i>	Moderate	Sun, PS	lavendar	evergreen	Various cultivars, evergreen groundcover, pink, blue sometimes white flowers	
	Beardtongue	<i>Penstemon digitalis</i>	Moderate	Sun, PS, Shade	white	no	2-3' tall white flowers	
	American speedwell	<i>Veronica americana</i>	Wet to mod.	Sun	blue/purple	no	Pretty blue/purple flower, needs wet sites	
	Culver's Root	<i>Veronicastrum virginicum</i>	Wet to mod.	Sun, PS	white	no	Upright white perennial, 3' tall, summer flowers, pink cultivars	
Great blue lobelia	<i>Lobelia siphilitica</i>	Wet to mod.	Sun, PS, Shade	blue	no	Purple-blue summer flowers, needs shade in warmer areas, fragrant		
Marsh fern	<i>Thelypteris palustris</i>	Wet to mod.	Sun, PS	no	no	Fine texture, spreading, deciduous fern, 2-3' tall		
Milkweed, swamp	<i>Asclepias incarnata</i>	Wet to mod.	Sun, PS	pink	no	Wet meadows, pink clusters of flowers, Monarch butterfly larval food		
Narrow-leaved sunflower	<i>Helianthus angustifolius</i>	Wet to mod.	Sun	yellow	no	Late summer bright yellow flowers all up and down 8' tall stalks, spreads		
New York ironweed	<i>Vernonia noveboracensis</i>	Wet to mod.	Sun, PS	purple	no	Intense purple flowers in late summer, fall		
Northern blue flag	<i>Iris versicolor</i>	Wet to mod.	Sun, PS	blue	no	Medium blue-purple flowers, grows at pond edges		
Royal fern	<i>Osmunda regalis</i>	Wet to mod.	Sun, PS, Shade	no	no	Tall deciduous fern, likes wet feet, but not continuous saturation		
Turk's cap lily	<i>Lilium superbum</i>	Wet to mod.	Sun, PS	orange	no	Tall with orange summer flowers, takes several years to bloom		
Virginia bluebells	<i>Mertensia virginica</i>	Wet to mod.	Shade, PS	blue	no	Spring ephemeral, blue flowers, color can vary to pink or white		

F  
l  
o  
w  
e  
r  
s  
,  
G  
r  
a  
s  
s  
e  
s  
,  
&