






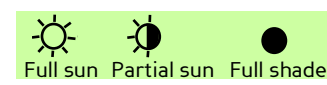









# TREES

	Ecological Benefits	Description/Habitat	Site Conditions	Characteristics
<b>Black Willow</b> <i>Salix nigra</i> 	Supports native pollinators, twigs eaten by larger mammals  Fibrous root system and tolerance of wet conditions prevent stream banks from eroding	Deciduous lowland tree, grows in moist and saturated soils along streams, rivers and other floodplain or wetland areas. Easy to establish from cuttings.	<b>Soil pH:</b> 5.0-8.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Male and Female greenish catkins, Apr-Jun <b>Fruit:</b> Seeds, after 10 yrs <b>Fall Color:</b> Insignificant <b>Height:</b> 10'-40'
<b>Red Maple</b> <i>Acer rubrum</i> 	Early flowering time supports native pollinators in the spring and the seeds and twigs are eaten by birds and mammals.  It is often used in site rehabilitation	Maples are very adaptable, living in swamps and drier upland areas. The bright-red fall color is aesthetically pleasing.	<b>Soil pH:</b> 5.5-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Red rarely yellow, Mar-May <b>Fruit:</b> Red, winged seeds, May-Jul <b>Fall Color:</b> True to its name, leaves turn bright red <b>Height:</b> 20'-40'
<b>Silver Maple</b> <i>Acer saccharinum</i> 	Provide seeds and nesting sites for birds, early pollen producer. Rapid growth makes it beneficial in reclamation areas, but may shade out other species.	Lowland riparian tree, lives in well-drained, moist soils in floodplains and along water sources. Feathery canopy appearance. Subject to breakage.	<b>Soil pH:</b> 5.5-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Greenish/reddish, short clusters, Feb-May <b>Fruit:</b> Winged seeds Apr-Jun <b>Fall Color:</b> Pale yellow <b>Height:</b> 40'-60'
<b>American Sycamore</b> <i>Platanus occidentalis</i> 	Animals eat twigs, cavities provide shelter, shade  Good for rehabilitating sites with saturated soils, may shade out smaller species	Large, fast growing trees, with an open, irregular crown and distinguishing bark. They tolerate a range of conditions, mainly growing around rivers and lakes	<b>Soil pH:</b> 5.0-6.5 <b>Type:</b> Loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Small, brown globose heads Apr-Jun <b>Fruit:</b> Small, hairy, Oct-winter, available for animals <b>Fall Color:</b> Yellowish brown <b>Height:</b> 50'-130'
<b>Tulip Poplar</b> <i>Liriodendron tulipifera</i> 	Provides pollen for native insects and fruits and twigs for mammals  Often planted in restoration but shouldn't be overused since rapid growth pushes out other plants	Known for its fast, straight growth and the attractive, tulip-like flowers. It grows best in lowland areas with well-drained, loose texture soils.	<b>Soil pH:</b> 4.5-7.5 <b>Type:</b> Loam, sand <b>Moisture:</b> Moist  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Orange/green, tulip-like, very show and fragrant, May-Jun. <b>Fruit:</b> Slim, Sept-Oct <b>Fall Color:</b> Golden yellow <b>Height:</b> 70'-100'
<b>Swamp White Oak</b> <i>Quercus bicolor</i> 	Provides shelter and shade, as well as food (acorns) for animals, very valuable for wildlife	Swamp white oaks are large deciduous trees. Leaves feature two-toned color on the top and bottom*. They live in swamps and along stream edges.	<b>Soil pH:</b> 4.3-6.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Catkins, male(red), female (green/yellow), Mar-May <b>Fruit:</b> Acorns, fall <b>Fall Color:</b> Gold brown/red <b>Height:</b> 60'-70'
<b>Yellow Birch</b> <i>Betula alleghaniensis</i> 	Provides food and shelter for songbirds Commonly used riparian tree enjoy wetter conditions and grow fairly rapidly	Displaying beautiful fall color, yellow birch is a tree with attractive, papery bark and open canopy. Lives along streams, ponds, rivers, and swamps	<b>Soil pH:</b> 4.0-8.0 <b>Type:</b> Clay, loam <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️🌑	<b>Flowers:</b> Yellow Green, Apr-May <b>Fruit:</b> Green to tan, cone-like, July-Oct <b>Fall Color:</b> Yellow <b>Height:</b> 60'-80'



# SHRUBS

	Ecological Benefits	Description/Habitat	Site Conditions	Characteristics
<b>Buttonbush</b> <i>Cephalanthus occidentalis</i> 	Provides for native insects and pollinators.  They are good for erosion control along stream banks.	Button bush is a small to medium-sized shrub, growing in marshes, forest wetlands, and along bodies of fresh water. Can grow in shade but needs sun to flower	<b>Soil pH:</b> 6.1-8.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Distinctive dense, round clusters of white flowers, Jul-Aug <b>Fruit:</b> Green/brown, Sep-Jan <b>Fall Color:</b> Insignificant <b>Height:</b> 3'-10'
<b>Northern Spicebush</b> <i>Lindera benzoin</i> 	Food for birds and butterflies, all parts are edible and aromatic leaves and berries can be used to make tea	The spicebush grows in forested areas, along streams and in floodplains	<b>Soil pH:</b> 4.5-6.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️🌑	<b>Flowers:</b> Small and yellow, before leaves, Mar-May <b>Fruit:</b> Bright red berries, Sep-Oct <b>Fall Color:</b> Golden-yellow <b>Height:</b> 3'-15'
<b>Red-Osier Dogwood</b> <i>Cornus sericea</i> 	Wildlife eat twigs and the fruit are eaten by birds. The shrubby, multi-stemmed structure provides great nesting sites for birds and small mammals. (Can also be used in Zone 3)	Red Osier dogwoods are shrubby lowland plants know for their bright red stems	<b>Soil pH:</b> 4.5-6.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> White, flat-topped clusters May-Aug <b>Fruit:</b> White, Jul-Oct <b>Fall Color:</b> Reddish green with bright red stems that add color in winter <b>Height:</b> To 10'
<b>Silky Dogwood</b> <i>Cornus amomum</i> 	Provides for songbirds, waterfowl, and mammals. (Can also be used in Zone 3)	Shrubby dogwood that likes forested wetlands, stream and pond banks	<b>Soil pH:</b> 4.5-6.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> White, flat-topped clusters May-Aug <b>Fruit:</b> White, Jul-Oct <b>Fall Color:</b> Reddish green with bright red stems that add color in winter <b>Height:</b> To 10'
<b>Swamp Rose</b> <i>Rosa palustris</i> 	Edible fruit provides for song birds, small mammals and insects	This thorny plant tolerates flooding. Its showy flowers are aesthetically pleasing.	<b>Soil pH:</b> 4.0-7.0 <b>Type:</b> Clay, loam <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Pink, Jun-Aug <b>Fruit:</b> Red berry, Jul-Mar <b>Fall Color:</b> <b>Height:</b> 8'
<b>Southern Arrowwood</b> <i>Viburnum dentatum</i> (V. <i>recognitum</i> ) 	Dark berries attract birds and small mammals like chipmunks	Densely leaved and often used in landscaping, due to it's form. Straight stems, nice structure in winter. Likes wooded floodplains and stream banks with loamy soil.	<b>Soil pH:</b> 5.1-6.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Dry-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> White, May-Jun <b>Fruit:</b> Blue/black berry, Sep-Nov <b>Fall Color:</b> Reddish purple <b>Height:</b> 10'-15'
<b>Winterberry Holly</b> <i>Ilex verticillata</i> 	Although poisonous to humans, berries provide food for birds and mammals in winter	Thrive in fresh tidal and shrub swamps and forested wetlands	<b>Soil pH:</b> 4.3-6.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️☀️🌑	<b>Flowers:</b> Greenish white, Jun-Jul <b>Fruit:</b> Red berries, Aug-Feb, persist into winter <b>Fall Color:</b> Yellow, brown <b>Height:</b> 6'-12'



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These are also great places to find more information on the listed native species!

## Photo Sources

(a is top or left picture, b is bottom or right picture)

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# A SHORT LIST OF SUGGESTED BUFFER PLANTS

## ZONE 1

*A native riparian forested area planted with trees and shrubs offers long-term stream and watershed health*








Of course, some maintenance is involved (like removing invasives). However, **there's no harvesting of products in this zone since it's crucial in providing for your growing ecosystem!** Functions of this zone include bank stabilization, slowing down runoff, encouraging more infiltration, and providing food, shelter, and shade for the local wildlife, fish, and beneficial insects. This zone is also a future source of large woody material for stream habitat.

If you need to use chemicals such as herbicide or pesticides, be purposeful in selection and application. Use **"aquatic rated"** kinds to prevent damaging aquatic life.









ZONE 1	ZONE 2	ZONE 3
From water's edge to about 15 feet in Keep it native!	Native fruit and nut trees for you and wildlife	Herbaceous perennials that can be mechanically harvested. "Well-behaved" non-natives allowed here

# TREES

	Ecological/ Human Benefits	Potential Products/Income	Habitat/ Site Conditions	Description/ Characteristics
<b>Black Walnut</b> <i>Juglans nigra</i> 	The black walnut provides edible nuts for human and animals as well as lumber as a long-term product.	Nutmeats, shells, oils, syrup In shell-\$9.25/lb, Shelled-\$12/lb, Mature trees produce 6,000 lb nuts/acre/year x 10\$/lb=\$60,000/acre/year)	<b>Soil pH:</b> 5.5-8.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️ Wet, riparian soils and should be planted near species that are juglone tolerant*	Coarse, sharp-looking branches, spreading head  <b>Flowers:</b> Catkins, Apr-Jun <b>Fruit:</b> Nut, large spherical husk, Oct-Nov <b>Fall Color:</b> First to drop leaves and last to leaf out <b>Height:</b> 70'-100'
<b>Sweet Crab Apple</b> <i>Malus coronaria</i> 	Fleshy fruits are too sour for people to eat raw but provide food for wildlife and attracts pollinators. The tangling branches provide nesting sites for birds.	Varied production, 6bushels of apples/tree and 100 trees/acre, \$30/bushel, \$18,000 per acre	<b>Soil pH:</b> 6.0-7.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️ Forest edges, rock streams and fields	Broad, irregular crown, occasionally multi-trunked  <b>Flowers:</b> Pink, highly fragrant April to May <b>Fruit:</b> Yellow/green Sep-Nov <b>Fall Color:</b> Yellow/red <b>Height:</b> 15'-30'
<b>Pawpaw</b> <i>Asimina triloba</i> 	Fruit eaten by mammals. Although native, it tastes "tropical" with a custard-y texture, and is eaten fresh or used in desserts.	Fresh fruit: \$2/lb wholesale, \$3+/lb retail Frozen Pulp: \$6/lb retail Jam: \$6/6oz jar retail	<b>Soil pH:</b> 5.0-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Grows in depressional areas with rich, moist soil	Tree with large leaves and a full, egg-shaped head  <b>Flowers:</b> Purplish, Apr-May <b>Fruit:</b> Yellow/green stubby bananas, Aug-Oct <b>Fall Color:</b> Yellow-red <b>Height:</b> to 10'
<b>Persimmon</b> <i>Diospyros virginiana</i> 	Fruit eaten by almost all birds and mammals, as well as humans	Fresh-\$2.75/lb retail, frozen-\$8+/lb retail, dried-\$11+/lb retail, \$4,125/acre estimate using \$2.75/lb	<b>Soil pH:</b> 5.0-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Grows in dry to moist soils and prefers drier, open areas	Small tree  <b>Flowers:</b> Yellowish, May-Jun <b>Fruit:</b> Orange, size of a large cherry, Aug-Oct <b>Fall Color:</b> Orange/yellow <b>Height:</b> 30'-50'
<b>Downy Service Berry</b> <i>Amelanchier arborea</i> 	Food for birds and mammals, fruits are eaten by over 50 species of wildlife. Berries can also be used for making jam if the birds haven't eaten them all.	Est. \$15,000/acre for berries	<b>Soil pH:</b> 4.5-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Wooded areas with moist, well-drained soils, tolerates drier conditions	Medium-sized tree or multi-trunked shrub, open canopy  <b>Flowers:</b> White clusters, Mar-June <b>Fruit:</b> Red berries, June <b>Fall Color:</b> orange/gold and red/green <b>Height:</b> 15'-25'



# SHRUBS

	Ecological/ Human Benefits	Potential Products/Income	Habitat/ Site Conditions	Description/ Characteristics
<b>Black Raspberry</b> <i>Rubus occidentalis</i> 	A brambly, native shrub that produces black raspberry fruits for people to eat, as well as the wildlife. The brambles also provides nesting sites for small mammals and birds.	Harvested: \$1.50-3.50/pint; Pick-your-own-\$3-\$5/lb; Net return varies widely, up to \$27,000/acre depending on yield and price/acre	<b>Soil pH:</b> 6.8 or less <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Likes sandy, moist or dry soils that are slightly acidic, along stream banks	Brambly, stemming shrub with purplish stems and thorns  <b>Flowers:</b> , March to June <b>Fruit:</b> Black berries, June to August <b>Fall Color:</b> Insignificant <b>Height:</b> To 6'
<b>Common Elderberry</b> <i>Sambucus canadensis</i> 	A native shrub provides fruit for wildlife and helps with erosion control along stream banks. Considered "Nature's Medicine Chest"	Juice: \$15-\$17/11oz jar Syrup: \$18/4oz jar retail Wine \$10-\$13/bottle Cough Drops: \$2.50/15 retail	<b>Soil pH:</b> 5.0-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Tolerant of a range of conditions, prune heavily in winter to maintain thick form	Large, dense, and fast-growing, attractive flowers  <b>Flowers:</b> White, flat-topped, June-July <b>Fruit:</b> Purple/black, Aug-Oct <b>Fall Color:</b> Insignificant <b>Height:</b> 3'-13'
<b>Black Chokeberry</b> <i>Aronia melanocarpa</i> 	Small tree or shrub that provides food for birds and mammals	Possible \$10-\$12/lb (mid-west Iowa markets) \$0.50-\$1.25/lb shipping to value-added producers	<b>Soil pH:</b> 6.5-8.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Lowland woods, swamps, bogs, moist thickets	Upright, spreading deciduous shrub, attractive flowers  <b>Flowers:</b> White, flat-topped, May <b>Fruit:</b> Berries, black, summer/fall <b>Fall Color:</b> Crimson <b>Height:</b> 3'-6'
<b>Highbush Blueberry</b> <i>Vaccinium corymbosum</i> 	A native shrub that provides fruit for birds and mammals. Potential products are raw fruit and jams.	\$2-\$5/pint (\$3,000-\$18,000/acre, depending on pints/acre) \$.65-\$1.50/lb to processor	<b>Soil pH:</b> 4.5-7.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️ Forested wetlands, swamps, bogs, rock outcroppings	Twiggy, thicket-forming shrub with nice fall color  <b>Flowers:</b> May-June <b>Fruit:</b> Blue/black berries Jun-Sept <b>Fall Color:</b> Bright red <b>Height:</b> To 12'
<b>American Hazelnut</b> <i>Corylus americana</i> 	Nuts are great source of income. Provide a great source of fiber, sold in the shell or shelled, or made into flours, candies, butters, and oils	In-shell: \$3/lb wholesale Shelled: \$6/8oz retail Oils \$8/8oz jar retail	<b>Soil pH:</b> 5.5-7.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet  <b>Light:</b> ☀️-☀️-● Rich, well-drained soils, forests, disturbed areas	Dense, deciduous shrub with one main stem, thicket-forming  <b>Flowers:</b> May-June <b>Fruit:</b> Nuts, ragged husk, Jul-Sept <b>Fall Color:</b> Bright yellow to deep red <b>Height:</b> To 10'
<b>Beach Plum</b> <i>Prunus maritima</i> 	Require cross-pollination, used in jams and sold at farmers markets	Frozen or whole: \$6/lb Fruit must be cleaned	<b>Soil pH:</b> 6.0-6.5 <b>Type:</b> Loam, sand <b>Moisture:</b> Dry-Moist  <b>Light:</b> ☀️ Sandy, well-drained, nutrient-poor soils	Low, spreading, and scraggly shrub or tree  <b>Flowers:</b> White, May <b>Fruit:</b> Purple, Aug-Sep <b>Fall Color:</b> Red/orange <b>Height:</b> To 5'

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These are also great places to find more information on the listed native species!

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# A SHORT LIST OF SUGGESTED BUFFER PLANTS

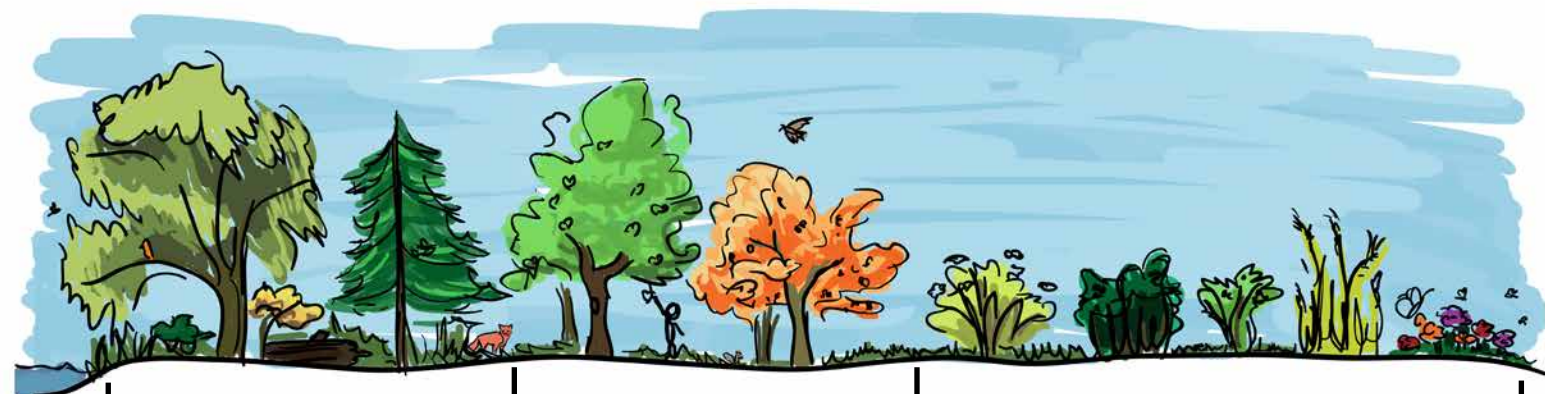
## ZONE 2

An area planted with native fruit and nut trees for harvesting, selling, and personal consumption



Incorporating edibles into your buffer really increases the benefits of planting one. Not only do fruit and nut trees provide people with home-grown food, but these lovely natives will attract plenty of wildlife. Using these suggested plant species and others, **you can customize your buffer to fit your needs AND improve water quality and wildlife habitat!**

Of course, maintenance is essential to ensuring your trees are yielding maximumly so the use of aquatic and environmentally safe pesticides, herbicides, and fertilizers may be used. Using chemicals that pollute the waterways counteracts the purpose of the buffer, so **think before you apply.**



### ZONE 1

From water's edge to about 15 feet in  
Keep it native!








### ZONE 2

Native fruit and nut trees for you and wildlife

### ZONE 3





Herbaceous perennials that can be mechanically harvested. "Well-behaved" non-natives allowed here

# TREES & SHRUBS





Ecological Benefits/ Potential products	Description/Habitat	Site Conditions	Characteristics
<b>Witch Hazel</b> <i>Hamamelis virginiana</i>  <p>A small tree or shrub. Game birds and mammals eat the twigs, buds and leaves. Has medicinal purposes. Woody floral*</p>	Noted for fall/winter bloom. Witch hazel is shade tolerant, growing in rich, well-drained acidic soils. It is often multi-trunked with an open crown.	<b>Soil pH:</b> 5.5-6.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Dry-Moist <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> Yellow, Sept-Dec <b>Fruit:</b> Tan capsule, Oct-Nov <b>Fall Color:</b> Golden <b>Height:</b> 15'-30'
<b>Pussy Willow</b> <i>Salix discolor</i>  <p>Eaten by wildlife, but is well-known for its fuzzy catkins which are often cut and sold on the floral market. Woody floral*</p>	Small ornamental tree or shrub with upright, spreading stems. Grows in full sun in damp lowlands, short-lived but fast growing.	<b>Soil pH:</b> Acidic <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> Fuzzy catkins, aesthetically pleasing, Feb-May <b>Fruit:</b> Brown <b>Fall Color:</b> Not notable <b>Height:</b> 15'-25'
<b>Curly Willow</b> <i>Salix mastudana</i>  <p>The curly willow provides twigs for animals to eat, "curled" branches are aesthetically pleasing and can cut and sold. Woody floral*</p>	Small ornamental with interesting branching tree grows in wetter conditions	<b>Soil pH:</b> <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> Yellow <b>Fruit:</b> <b>Fall Color:</b> Golden <b>Height:</b> To 30'
<b>Hops (Hoptree)</b> <i>Ptelea trifoliata</i>  <p>The Hoptree provides sweet nectar for native bees and butterflies and seeds for birds and mammals. It's fruit is available through the winter. The Seed can be used to replace hops in beer.</p>	The tree tolerate a range of soil conditions, often growing in gravelly or sandy soils with a near neutral pH in full sun to full shade.	<b>Soil pH:</b> <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Dry-Moist <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> Small, green clusters, may-Jun <b>Fruit:</b> Flat, circular, papery, Sept-spring <b>Fall Color:</b> Yellow <b>Height:</b> 10'-20'
<b>Flowering Quince</b> <i>Chaenomeles speciosa</i>  <p>A non-native flowering shrub that attracts wildlife like rabbits and humming birds. Woody floral.</p>	Small, multi-stemmed shrub with showy flowers, very aesthetically pleasing in a hedge row. Is not picky about soil but requires full sun	<b>Soil pH:</b> Wide range <b>Type:</b> Wide range <b>Moisture:</b> Wide range <b>Light:</b> ☀️	<b>Flowers:</b> Showy, red, March (before leaves) <b>Fruit:</b> Yellow/green, fall <b>Fall Color:</b> <b>Height:</b> 6'-10'
<b>Chinese Chestnut</b> <i>Castanea mollissima</i>  <p>Provides nuts and shelter for wildlife, as well as shade Potential, unidentified market for nuts which can also be eaten by humans</p>	A medium-sized, wide spreading tree with dense shade. Grows in moist, well-drained soils. Resistant to the Chestnut blight	<b>Soil pH:</b> Slightly acidic <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Dry-Moist <b>Light:</b> ☀️	<b>Flowers:</b> yellow/white catkins <b>Fruit:</b> Nut in husk, Sep-Oct <b>Fall Color:</b> <b>Height:</b> 40'-60'
<b>American Holly</b> <i>Ilex opaca</i>  <p>This iconic evergreen tree provides winter berries that are mostly eaten by song birds. Woody floral*</p>	The aesthetically pleasing tree has notable, prickly leaves. It enjoys growing in sandy wooded areas.	<b>Soil pH:</b> 4.0-7.5 <b>Type:</b> Clay, loam <b>Moisture:</b> Moist <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> White, May-Jun <b>Fruit:</b> Red berries <b>Fall Color:</b> Evergreen <b>Height:</b> 15'-50'

☀️ ☾️ ●  
Full sun Partial sun Full shade

# TREES & SHRUBS

Ecological Benefits/ Potential products	Description/Habitat	Site Conditions	Characteristics
<b>Wild Hydrangea</b> <i>Hydrangea arborescens</i>  <p>A plant grown for aroma and aesthetics, but is also beneficial for pollinators and insects. Woody floral*</p>	Wild hydrangeas are a fast-growing, short-lived understory shrub with showy flowers. Its natural habitat is on rocky banks and ravines	<b>Soil pH:</b> 6.1-8.5 <b>Type:</b> Loam, sand <b>Moisture:</b> Moist <b>Light:</b> ☀️-☾️●	<b>Flowers:</b> Green/white, Jun-Aug <b>Fruit:</b> Brown, late summer <b>Fall Color:</b> insignificant <b>Height:</b> 3'-6'
<b>Red-Osier Dogwood</b> <i>Cornus sericea</i>  <p>Wildlife eat twigs and the fruit are eaten by birds. Attracts pollinators. The shrubby, nesting. Woody floral*</p>	Shrubby, multi-stemmed lowland plants with showy flowers and fruit	<b>Soil pH:</b> 4.5-6.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet <b>Light:</b> ☀️-☾️	<b>Flowers:</b> White, flat-topped clusters May-Aug <b>Fruit:</b> White, Jul-Oct <b>Fall Color:</b> Reddish green, bright red stems add color in winter <b>Height:</b> To 10'
<b>Silky Dogwood</b> <i>Cornus amomum</i>  <p>Provides for songbirds, waterfowl, and mammals. (Can also be used in Zone 1)</p>	Shrubby dogwood that likes forested wetlands, stream and pond banks	<b>Soil pH:</b> 4.5-6.0 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet <b>Light:</b> ☀️-☾️	<b>Flowers:</b> White, flat-topped clusters May-Aug <b>Fruit:</b> White, Jul-Oct <b>Fall Color:</b> Reddish green with bright red stems that add color in winter <b>Height:</b> To 10'
<b>Highbush Blueberry</b> <i>Vaccinium corymbosum</i>  <p>A native shrub that provides fruit for birds and mammals. Potential products are raw fruit and jams.</p>	\$2-\$5/pint (\$3,000-\$18,000/acre, depending on pints/acre) \$.65-\$1.50/lb to processor	<b>Soil pH:</b> 4.5-7.5 <b>Type:</b> Clay, loam, sand <b>Moisture:</b> Moist-Wet <b>Light:</b> ☀️	<b>Flowers:</b> May-June <b>Fruit:</b> Blue/black berries Jun-Sept <b>Fall Color:</b> Bright red <b>Height:</b> To 12'
<p><b>*Woody florals</b>            Cuttings can be taken every 2-3 years and sold to the floral/crafts industry</p> <p>Cuttings: \$0.37-\$0.45/stem retail            Wreaths: \$45+ each retail</p>			

# HERBACEOUS PLANTS

<b>Canada Mayflower</b> <i>Maianthemum canadense</i>  <p>A small, perennial understory plant that grows in northern forests</p>	<b>Flowers:</b> White clusters, Spring-Summer <b>Fruit:</b> Red berries <b>Height:</b> 2-6"
<b>Bee Balm</b> <i>Monarda didyma</i>  <p>A garden plant, escaped cultivation, favorite of hummingbirds. Likes rich soil</p>	<b>Flowers:</b> Dense head with red bracts, Jul-Sept <b>Fruit:</b> nut-like <b>Height:</b> 1-5'
<b>Cardinal Flower</b> <i>Lobelia cardinalis</i>  <p>Aesthetic plant that grown on stream banks and damp meadows, attracts pollinators and hummingbirds, biennial must be reseeded</p>	<b>Flowers:</b> Scarlet, Jul-Oct <b>Fruit:</b> <b>Height:</b> 2-5'
<b>Native Wildflowers and Grasses</b>  <p>Common Milkweed <i>Asclepias syriaca</i></p>	<p>A band of native flowers and grasses can be a first line of defense in "buffering" the effects of runoff. They can be planted for aesthetics and to attract wildlife and pollinators. Native Milkweed varieties (pictured), in particular, provide food and shelter for Monarch butterflies.</p>

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These are also great places to find more information on the listed native species!

## Picture Sources:

(a is top or left picture, bi is bottom or right)

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a. <https://hummingbirdgardener.com/2012/08/30/cardinal-flower-a-favorite-native/>  
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# A SHORT LIST OF SUGGESTED BUFFER PLANTS

## ZONE 3

*The “working” part of your buffer, allowing mechanical harvesting and planting of your crops*



This zone offers the most flexibility in what you want to plant and how you want to maintain and harvest your crops. **Species planted here can be edibles, biomass crops, plants providing wildlife benefits, industrial uses, or just for aesthetic beauty.** Lower-growing grasses and wildflowers can attract a variety of native pollinators.

As always, **use chemicals carefully and don't use anything that will pollute the water.** Planting non-native species may be considered but have a plan to control its spread and prevent it from becoming invasive.



### ZONE 1

From water's edge to about 15 feet in  
Keep it native!

### ZONE 2

Native fruit and nut trees for you and wildlife

### ZONE 3

Herbaceous perennials that can be mechanically harvested. “Well-behaved” non-natives allowed here