

TABLE 4.1: Recommended Deciduous Trees for Selected Uses (see Table 4.2 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}							Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/infrequent inundation)	Wetlands (surface saturation/frequent or prolonged inundation)	
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock	Wildlife Habitat			Screens/Barriers
								Nesting/Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/Pollen	Foliage					
ASH, GREEN <i>Fraxinus pennsylvanica</i>	■	■	■		■	■	■	■			■			■		■			
ASH, WHITE <i>Fraxinus americana</i>	■	■	■	■	■		■	■			■			■		■			
ASPEN, LARGE-TOOTHED <i>Populus grandidentata</i>	■			■	■		■	■						■					
ASPEN, QUAKING <i>Populus tremuloides</i>	■			■	■		■	■						■					
BASSWOOD, AMERICAN <i>Tilia americana</i>	■			■	■		■	■				■				■			
BEECH <i>Fagus grandifolia</i>	■	■	■	■	■		■	■		■				■		■			
BIRCH, RIVER <i>Betula nigra</i>	■	■	■	■	■	■	■	■			■			■			■		
BLACKGUM <i>Nyssa sylvatica</i>	■	■	■	■	■	■	■	■			■		■			■		■	
BOX-ELDER <i>Acer negundo</i>	■	■	■		■	■	■	■			■					■		■	
BUTTERNUT <i>Juglans cinerea</i>	■	■			■		■	■		■	■		■	■		■			
CHERRY, BLACK <i>Prunus serotina</i>	■	■	■	■	■		■	■		■		■	■	■		■			
CHERRY, PIN <i>Prunus pensylvanica</i>	■			■	■		■	■		■		■	■	■		■			
CHESTNUT, AMERICAN <i>Castanea dentata</i>	■	■	■	■	■		■	■		■			■						
CHINQUAPIN <i>Castanea pumila</i>	■	■	■	■	■		■	■		■	■		■		■	■			
CHOKECHERRY <i>Prunus virginiana</i>	■	■		■	■		■	■		■		■	■	■	■	■			
COTTONWOOD, EASTERN <i>Populus deltoides</i>	■	■	■	■	■	■	■	■								■		■	

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								Nesting/Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/Pollen	Foliage					
CRABAPPLE, SOUTHERN <i>Malus coronaria</i>	■	■	■	■	■		■	■		■		■	■	■		■	■		
CRABAPPLE, SWEET <i>Malus coronaria</i>	■	■	■	■	■		■	■		■		■	■	■		■	■		
CYPRESS, BALD <i>Taxodium distichum</i>			■		■	■	■	■									■		■
DOGWOOD, FLOWERING <i>Cornus florida</i>	■	■	■	■	■		■	■		■			■			■			
DOGWOOD, PAGODA <i>Cornus alternifolia</i>	■	■		■	■		■	■		■			■			■			
ELM, AMERICAN <i>Ulmus americana</i>	■	■	■	■	■	■	■	■					■				■	■	
ELM, SLIPPERY <i>Ulmus rubra</i>		■		■	■	■	■	■					■				■	■	
HACKBERRY <i>Celtis occidentalis</i>	■	■	■	■	■		■	■		■		■	■	■		■	■		
HACKBERRY, DWARF <i>Celtis pumila</i>	■	■		■	■		■	■		■		■	■	■		■	■		
HACKBERRY, SMALL'S <i>Celtis laevigata var. smallii</i>			■	■	■	■		■		■		■	■	■		■	■		
HAWTHORN, COCKSPUR <i>Crataegus crus-galli</i>	■	■	■	■	■		■	■			■	■	■			■	■		
HAWTHORN, GREEN <i>Crataegus viridis</i>			■		■	■	■	■			■	■	■			■	■	■	
HAWTHORN, WASHINGTON <i>Crataegus phaenopyrum</i>	■	■	■	■	■		■	■			■	■	■			■	■		
HICKORY, BITTERNUT <i>Carya cordiformis</i>	■	■	■		■	■	■	■					■				■	■	
HICKORY, MOCKERNUT <i>Carya tomentosa</i>	■	■	■	■	■		■	■		■			■				■		
HICKORY, PIGNUT <i>Carya glabra</i>	■	■	■	■	■		■	■			■		■				■		

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								Nesting/Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/Pollen	Foliage					
HICKORY, SHAGBARK <i>Carya ovata</i>	■	■		■	■		■	■		■		■				■			
HONEYLOCUST <i>Gleditsia triacanthos</i>	■	■	■	■	■		■	■					■	■		■			
HOP-HORNBEAM <i>Ostrya virginiana</i>	■	■		■	■		■	■		■						■			
HORNBEAM, AMERICAN <i>Carpinus caroliniana</i>	■	■	■		■	■	■	■		■						■	■		
LOCUST, BLACK <i>Robinia pseudoacacia</i>	■	■	■	■			■	■				■		■		■			
MAGNOLIA, SWEETBAY <i>Magnolia virginiana</i>			■		■	■	■	■		■		■			■	■	■		
MAPLE, RED <i>Acer rubrum</i>	■	■	■	■	■	■	■	■		■		■	■	■		■		■	
MAPLE, SILVER <i>Acer saccharinum</i>	■	■	■		■	■	■	■		■		■	■			■		■	
MOUNTAIN-ASH, AMERICAN <i>Sorbus americana</i>	■			■	■		■	■		■		■			■	■			
MULBERRY, RED <i>Morus rubra</i>	■	■	■	■	■		■	■		■		■				■			
NANNYBERRY <i>Viburnum lentago</i>	■	■			■	■	■	■		■		■			■	■	■		
OAK, BLACK <i>Quercus velutina</i>	■	■	■	■	■		■	■		■			■	■		■			
OAK, BLACKJACK <i>Quercus marilandica</i>		■	■	■			■	■		■			■	■		■			
OAK, CHERRYBARK <i>Quercus pagoda</i>			■			■	■	■		■			■	■		■	■		
OAK, CHESTNUT <i>Quercus montana (Q. prinus)</i>	■	■	■	■			■	■		■		■	■			■			
OAK, CHINQUAPIN <i>Quercus muehlenbergii</i>	■			■			■	■		■		■	■			■			

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OAK, NORTHERN RED <i>Quercus rubra</i>	■	■		■	■		■	■		■			■	■		■			
OAK, OVERCUP <i>Quercus lyrata</i>		■	■		■	■	■	■		■				■	■			■	
OAK, PIN <i>Quercus palustris</i>	■	■	■		■	■	■	■		■				■	■	■			
OAK, POST <i>Quercus stellata</i>	■	■	■	■	■		■	■		■				■	■				
OAK, SAWTOOTH <i>Quercus acutissima</i>	■	■	■	■	■		■	■		■				■	■				
OAK, SOUTHERN RED <i>Quercus falcata</i>			■	■	■		■	■		■				■	■				
OAK, SWAMP CHESTNUT <i>Quercus michauxii</i>			■		■	■	■	■		■				■	■	■			
OAK, SWAMP WHITE <i>Quercus bicolor</i>			■		■	■	■	■		■				■	■	■			
OAK, WATER <i>Quercus nigra</i>			■		■	■	■	■		■				■	■	■			
OAK, WHITE <i>Quercus alba</i>	■	■	■	■	■		■	■		■				■	■	■			
OAK, WILLOW <i>Quercus phellos</i>			■		■	■	■	■		■				■	■	■			
OSAGE-ORANGE <i>Maclura pomifera</i>	■	■	■	■	■		■	■							■				
PAWPAW <i>Asimina triloba</i>	■	■	■		■	■	■	■		■				■		■			
PECAN <i>Carya illinoensis</i>	■	■	■	■	■		■	■		■					■				
PERSIMMON, COMMON <i>Diospyros virginiana</i>	■	■	■	■	■	■	■	■		■		■		■		■			
PLUM, AMERICAN <i>Prunus americana</i>	■	■	■	■	■		■	■		■		■		■	■				

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POPLAR, HYBRID <i>Populus deltoides x nigra</i> 'Spike'	■	■	■		■			■							■	■			
POPLAR, TULIP <i>Liriodendron tulipifera</i>	■	■	■	■	■		■	■					■	■	■	■			
REDBUD <i>Cercis canadensis</i>	■	■			■		■	■					■		■				
REDWOOD, DAWN <i>Metasequoia glyptostroboides</i>	■	■	■		■	■		■								■			
SASSAFRAS <i>Sassafras albidum</i>	■	■	■	■			■	■		■	■	■	■		■	■			
SERVICEBERRY, CANADIAN <i>Amelanchier canadensis</i>			■		■	■	■	■		■		■	■		■	■	■		
SERVICEBERRY, COMMON <i>Amelanchier arborea</i>	■	■	■	■	■	■	■	■		■		■	■		■	■	■		
SERVICEBERRY, SMOOTH <i>Amelanchier laevis</i>	■	■		■	■		■	■		■		■	■		■	■			
SWEETGUM <i>Liquidambar styraciflua</i>			■		■	■	■	■								■	■		
SYCAMORE <i>Platanus occidentalis</i>	■	■	■		■	■	■	■								■	■		
TUPELO, SWAMP (SWAMP BLACK GUM) <i>Nyssa biflora</i>			■		■	■	■	■			■					■		■	
WALNUT, BLACK <i>Juglans nigra</i>	■	■	■		■		■	■		■	■		■	■					
WILLOW, BLACK <i>Salix nigra</i>	■	■	■		■	■	■	■					■	■		■		■	
WILLOW, HYBRID <i>Salix matsudana x alba</i> 'Austree'	■	■	■	■	■	■		■	■							■			
WILLOW, PURPLEOSIER <i>Salix purpurea</i> 'Streamco'	■	■	■		■	■		■	■							■			

Notes for this table are on Page 86.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density - Summer ^{4/}	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
ASH, GREEN <i>Fraxinus pennsylvanica</i>	All	Statewide	SP - P	35 ft.	Mod.	Medium	Low	Medium: seeds eaten by ducks, gamebirds, songbirds, squirrels; browsed by deer.	Naturally occurring on streambanks and floodplains. Abundant seed produced in late summer. Susceptible to emerald ash borer.
ASH, WHITE <i>Fraxinus americana</i>	All	Statewide	W - SP	35 ft.	Mod.	Medium	Low	Medium: seeds eaten by ducks, gamebirds, songbirds, squirrels; browsed by deer.	Attractive fall color (yellow to maroon). Abundant seed produced in late summer. Susceptible to emerald ash borer.
ASPEN, LARGE-TOOTHED <i>Populus grandidentata</i>	5b, 6a	Western Maryland	W - SP	40 ft.	Fast	Low	Very Low	Medium: browsed by deer and rabbits; buds and catkins eaten by grouse; bark and buds eaten by beaver.	Beneficial to cavity-nesting species when trees get older. Very fast-growing; relatively short-lived tree. In hedgerows and windbreaks, can be planted in one row, and add one or more other rows of species with higher density foliage. Has aggressive roots—keep away from structures, sewers, and tile lines.
ASPEN, QUAKING <i>Populus tremuloides</i>	5b, 6a, 6b	Higher elevations of W. Md. (mostly Garrett Co.)	W - SP	40 ft.	Fast	Low	Very Low	Medium: browsed by deer and rabbits; buds and catkins eaten by grouse; bark and buds eaten by beaver.	Similar to Large-Toothed Aspen (see above).
BASSWOOD, AMERICAN <i>Tilia americana</i>	All	Mostly Western Maryland	W - SP	40 ft.	Fast	Medium to High	Low	Low: seeds eaten by quail and squirrels; browsed by deer and rabbits.	Prefers rich, moist, well-drained soils; tolerates some drought. Good den tree when mature. Fragrant white flowers attract bees and other pollinators.
BEECH, AMERICAN <i>Betula lenta</i>	All	Statewide	W - SP	20 ft.	Slow	Medium	Low	High: fruits eaten by squirrels, quail, turkey, songbirds, deer.	Prefers rich, moist, well-drained soils; can tolerate drier or wetter conditions. Suckers and forms colonies. Shade tolerant.
BIRCH, RIVER <i>Betula nigra</i>	All	Mostly Coastal Plain; lower elevations in W. Md.	W - P	30 ft.	Fast	Low	Very Low	Medium: seeds eaten by ducks and songbirds.	Naturally occurring on streambanks and floodplains. Unique peeling reddish bark. Attractive for landscaping.
BLACKGUM <i>Nyssa sylvatica</i>	All	Statewide	W - P	30 ft.	Mod.	Medium	Low	Medium: fruits eaten by squirrels, quail, turkey, and songbirds; browsed by deer.	Foliage turns bright red in early fall.

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BOX-ELDER <i>Acer negundo</i>	All	Statewide; less common on Coastal Plain & at higher elevations of W. Md.	MW - P	40 ft.	Fast	Medium to High	Low	Medium: seeds eaten by gamebirds, songbirds, squirrels; browsed by deer.	Naturally occurring on streambanks and floodplains. Soft wood may split in ice storms. Abundant seed produced in late summer. Attracts box-elder bugs.
BUTTERNUT <i>Juglans cinerea</i>	5b, 6a, 6b, 7a, 7b	Mostly Piedmont & W. Md.; uncommon	MW - SP	40 ft.	Fast	Medium	Low	Medium: nuts eaten by squirrels.	Fast-growing but relatively short-lived tree. Nuts are similar to black walnut, with thick, hard shells that are not easily accessible as food for most wildlife (except squirrels). Butternut can be allelopathic to other plants. Susceptible to butternut canker, an introduced fungal disease.
CHERRY, BLACK <i>Prunus serotina</i>	All	Statewide; less common on the Coastal Plain	W - SP	40 ft.	Fast	Medium	Low	High: fruits eaten by songbirds, grouse, turkey, quail; browsed by rabbits and deer.	Clusters of white flowers attract bees and other pollinators. Leaves and branches are poisonous if eaten by livestock.
CHERRY, PIN <i>Prunus pensylvanica</i>	5b, 6a, 6b, 7a, 7b	Mostly Western Md.	W - MW	40 ft.	Fast	Medium	Low	High: fruits eaten by songbirds, grouse, turkey, quail; browsed by rabbits.	Same as above. Often sprouts abundantly after a forest fire or clear-cut.
CHESTNUT, AMERICAN <i>Castanea dentata</i>	All	Statewide; less common on the Coastal Plain	W - MW	20 ft.	Slow	Medium	Low	High: nuts eaten by grouse, turkey, squirrels, and deer; browsed by deer.	Native trees are susceptible to the Asian chestnut blight fungus. Stump sprouts occur, but rarely grow mature enough to produce seeds. Blight-resistant strains are being tested but are not readily available. Host plant for butterfly larvae.
CHINQUAPIN <i>Castanea pumila</i>	6a, 6b, 7a, 7b, 8a	Statewide, except at higher elevations; uncommon	W - MW	15 ft.	Slow	Medium	Low	Medium: nuts eaten by turkey, squirrels, and deer; browsed by deer.	Small tree or shrub. Moderately resistant to the Asian chestnut blight fungus that kills the related American chestnut (<i>C. dentata</i>). Nuts preferred by wildlife, but amount produced is low. Host plant for butterfly larvae.

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CHOKECHERRY <i>Prunus virginiana</i>	5b, 6a, 6b, 7a, 7b	Mostly Western Maryland	W - SP	15 ft.	Fast	High	Low	High: fruits eaten by songbirds, grouse, turkey, quail; browsed by rabbits and deer.	Small tree or shrub; tends to spread by root suckering. Clusters of white flowers attract bees and other pollinators. Leaves and branches are poisonous if eaten by livestock.
COTTONWOOD, EASTERN <i>Populus deltoides</i>	All	Statewide; especially common in Potomac River watershed	W - P	80 ft.	Fast	Medium to High	Low	Medium: browsed by deer and rabbits; buds and catkins eaten by squirrels and quail.	Naturally occurring on streambanks and floodplains. Tolerates dry soils. Grows rapidly, can be used to quickly establish cover for wildlife. Is weak-wooded, tends to be messy. Has aggressive roots; keep away from structures, sewers, and tile lines.
CRABAPPLE, SOUTHERN <i>Malus angustifolia</i>	All	Statewide; more common in eastern Md.	W - SP	20 ft.	Slow	Medium to High	Medium	High: fruits eaten by songbirds, grouse, turkey, quail, and various mammals; browsed by rabbits and deer.	Small tree or shrub; can spread by root suckering. Pink-white flowers attract bees and other pollinators. Plant at least 500 ft. away from red cedar (<i>Juniperus virginiana</i>) to avoid spread of cedar-apple rust.
CRABAPPLE, SWEET <i>Malus coronaria</i>	All	Statewide; common	W - SP	20 ft.	Slow	Medium to High	Medium	High: same as above.	Same as above.
CYPRESS, BALD <i>Taxodium distichum</i>	All	Coastal Plain	MW - P	45 ft.	Fast	High	Medium	Low: seeds eaten by ducks and marsh birds.	Naturally occurring on streambanks and in swamps.
DOGWOOD, FLOWERING <i>Cornus florida</i>	All	Statewide	W - SP	20 ft.	Slow	Low	Low	High: berries eaten by songbirds, grouse, turkey, quail, squirrels; browsed by deer, rabbits.	White flowers and red fruit. Widely planted as an ornamental. Susceptible to dogwood anthracnose disease.
DOGWOOD, PAGODA <i>Cornus alternifolia</i>	5b, 6a,6b, 7a, 7b	Piedmont & W. Md.	W - SP	25 ft.	Slow	Low	Low	High: berries eaten by songbirds, grouse, turkey, quail, squirrels; browsed by deer, rabbits.	Small tree or shrub; may be multi-stemmed. Usually found on dry, rocky sites, but will tolerate some moisture. White flowers and bluish-black fruit. Attracts pollinators.
ELM, AMERICAN <i>Ulmus americana</i> 'New Harmony' and 'Valley Forge'	All	Statewide	W - P	35 ft.	Mod.	Medium	Low	Low: seeds eaten by songbirds, grouse, turkey, quail; browsed by rabbits and deer.	Prefers moist soil but will tolerate drier sites. Species is susceptible to Dutch elm disease. The New Harmony and Valley Forge cultivars are disease-resistant.

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ELM, SLIPPERY <i>Ulmus rubra</i>	All	Mostly Piedmont	W - P	45 ft.	Fast	Medium	Low	Low: seeds eaten by songbirds, grouse, turkey, quail; browsed by rabbits and deer.	Naturally occurring on streambanks, floodplains, and uplands. Shade tolerant.
HACKBERRY <i>Celtis occidentalis</i>	All	Statewide	W - SP	25 ft.	Mod.	Medium to High	Low	High: fruits eaten by quail, turkey, and songbirds.	Small tree. Adaptable to a wide range of conditions. Flowers attractive to butterflies and other pollinators. Host plant for several species of butterfly larvae.
HACKBERRY, DWARF <i>Celtis pumila</i>	All	Mostly Piedmont & W. Md.	W - MW	15 ft.	Mod.	High	Low	High: fruits eaten by quail, turkey, and songbirds.	Small tree or shrub; single-stemmed. Flowers attractive to butterflies and other pollinators. Host plant for several species of butterfly larvae.
HACKBERRY, SMALL'S <i>Celtis laevigata</i> var. <i>smallii</i>	7a, 7b, 8a	Introduced; native to Southeastern U.S.	W - P	25 ft.	Mod.	High	Low	High: fruits eaten by quail, turkey, and songbirds.	Small tree. Very hardy; adapted to a wide range of soil and site conditions. Flowers attractive to butterflies and other pollinators. Host plant for several species of butterfly larvae.
HAWTHORN, COCKSPUR <i>Crataegus crus-galli</i>	All	Statewide; common, especially in W. Md.	W - SP	25 ft.	Slow	High	Medium	Medium: fruits eaten by songbirds, gamebirds, squirrels; browsed by deer.	Small tree or shrub. Attractive white flowers produce bright orange-red fruits that may persist into winter. Thorny stems. Flowers attract bees and other pollinators.
HAWTHORN, GREEN <i>Crataegus viridis</i>	All	Coastal Plain	MW - P	25 ft.	Slow	High	Medium	Medium: fruits eaten by songbirds, gamebirds, squirrels; browsed by deer.	Same as above.
HAWTHORN, WASHINGTON <i>Crataegus phaenopyrum</i>	All	Statewide; uncommon	W - SP	25 ft.	Slow	High	Medium	Medium: same as above.	Same as above. Often planted as an ornamental; multi-trunked or single-trunked forms are available.
HICKORY, BITTERNUT <i>Carya cordiformis</i>	All	Statewide	MW - P	25 ft.	Slow	Medium	Low	Low: nuts are very bitter and are not a preferred food; may be eaten by squirrels.	Naturally occurring on floodplains and in wetlands; occasionally on dry sites. Wood used for furniture, tool handles, charcoal, firewood.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
HICKORY, MOCKERNUT <i>Carya tomentosa</i>	All	Statewide; mostly at lower elevations	W - SP	20 ft.	Slow	Medium	Low	High: nuts eaten by squirrels, turkey, quail, deer.	Usually found on well-drained sites; tolerates some moisture. Wood used for furniture, tool handles, charcoal, firewood.
HICKORY, PIGNUT <i>Carya glabra</i>	All	Statewide	W - SP	20 ft.	Slow	Medium	Low	Medium: nuts are usually bitter and are not a preferred food; may be eaten by squirrels and other mammals.	Same as above.
HICKORY, SHAGBARK <i>Carya ovata</i>	All	Mostly Piedmont & W. Md.	W - SP	20 ft.	Slow	Medium	Low	High: nuts eaten by squirrels, turkey, quail, deer.	Same as above.
HONEYLOCUST <i>Gleditsia triacanthos</i>	All	Statewide	W - SP	40 ft.	Fast	Low to Medium	Very Low	Low: seeds eaten by songbirds and squirrels.	Prefers well-drained sites, but will tolerate brief inundation. Drought-resistant and somewhat tolerant of salinity. Fragrant white flowers attract bees and other pollinators.
HOP-HORNBEAM <i>Ostrya virginiana</i>	All	Mostly Piedmont & W. Md.	W - SP	20 ft.	Slow	Medium	Low	Medium: seeds eaten by songbirds, turkey, grouse, squirrels; browsed by deer, rabbits.	Occurs as an understory tree in moist woods and on rocky slopes. Produces hop-like, papery seed clusters.
HORNBEAM, AMERICAN <i>Carpinus caroliniana</i>	All	Statewide; less common on the lower Coastal Plain	MW - P	20 ft.	Slow	Medium	Low	Medium: seeds eaten by songbirds, turkey, grouse, squirrels; browsed by deer, rabbits, beaver.	Understory tree in woodlands; may be multi-stemmed. Prefers moist soil and partial shade.
LOCUST, BLACK <i>Robinia pseudoacacia</i>	All	Statewide; esp. common in W. Md.	W - MW	40 ft.	Fast	Low to Medium	Very Low	Low: seeds eaten by songbirds and squirrels.	Spreads readily; seeds freely and suckers. Nitrogen fixing. Fragrant white flowers attract bees and other pollinators. Flowers are poisonous if eaten by livestock.
MAGNOLIA, SWEETBAY <i>Magnolia virginiana</i>	6b, 7a, 7b, 8a	Coastal Plain	SP - P	30 ft.	Mod.	Medium	Low to Medium	Medium: seeds eaten by songbirds and squirrels; browsed by deer.	Considered a small tree or shrub. May be evergreen in mild winters. Creamy white flowers up to 3" diameter. Host plant for three species of swallowtail butterfly larvae.
MAPLE, RED <i>Acer rubrum</i>	All	Statewide	W - P	40 ft.	Fast	Medium to High	Low	Medium: seeds eaten by ducks, gamebirds, songbirds, squirrels; browsed by deer.	Abundant seed produced in the spring. Red fall color and blooms. May provide an early source of pollen for bees.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density - Summer ^{4/}	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
MAPLE, SILVER <i>Acer saccharinum</i>	All	Statewide; less common on Coastal Plain & at higher elevations of W. Md.	SP - P	45 ft.	Fast	Medium to High	Low	Medium: seeds eaten by ducks, gamebirds, songbirds, squirrels; browsed by deer.	Naturally occurring on streambanks and floodplains. Good source of woody debris for riparian systems. Roots can be aggressive. Abundant seed produced in the spring. May provide an early source of pollen for bees.
MOUNTAIN ASH, AMERICAN <i>Sorbus americana</i>	5b, 6a, 6b	Western Maryland	W - SP	20 ft.	Slow	Medium to High	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by deer.	Considered a small tree or shrub. Usually short-lived; prefers cool, moist sites. Creamy white flowers attract pollinators. Berries are blue-black.
MULBERRY, RED <i>Morus rubra</i>	All	Statewide	W - SP	35 ft.	Mod.	Medium	Low	High: fruits eaten by songbirds, squirrels, and other mammals.	Occurs in rich, moist woods and along field edges. Produces numerous, large, reddish-purple fruits that can be messy when fallen.
NANNYBERRY <i>Viburnum lentago</i>	5b, 6a, 6b	Mostly Western Maryland	MW - P	25 ft.	Slow	High	Low	Medium: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Considered a small tree or shrub. Naturally occurring on streambanks, floodplains, and other wet areas. Often suckers. Creamy white flowers attract pollinators. Berries are blue-black.
OAK, BLACK <i>Quercus velutina</i>	All	Statewide; more common in Piedmont & W. Md	W - MW	35 ft.	Mod.	Medium to High	Low	High: acorns eaten by quail, turkey, grouse, squirrels, and deer.	Prefers moist, well-drained sites, but tolerates drier conditions.
OAK, BLACKJACK <i>Quercus marilandica</i>	6b, 7a, 7b, 8a	Mostly Coastal Plain & Piedmont	W - MW	30 ft.	Mod.	Medium to High	Low	High: same as above.	Occurs on dry, sandy or shaly soils, including serpentine barrens and back dunes.
OAK, CHERRYBARK <i>Quercus pagoda</i>	7a, 7b, 8a	Coastal Plain	SP - P	35 ft.	Mod.	Medium to High	Low	High: same as above.	Occurs in moist, wooded floodplains and wetlands.
OAK, CHESTNUT <i>Quercus montana</i> (<i>Quercus prinus</i>)	All	Mostly Piedmont & W. Md.; infrequent on Coastal Plain	W - MW	35 ft.	Mod.	Medium to High	Low	High: same as above.	Grows well on dry, rocky, or gravelly soils.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
OAK, CHINQUAPIN <i>Quercus muehlenbergii</i>	6a, 6b, 7a, 7b, 8a	Mostly Allegany & Washington Cos.; uncommon	W - MW	35 ft.	Mod.	Medium to High	Low	High: acorns eaten by quail, turkey, grouse, squirrels, and deer.	Under-used, native tree. Usually found on dry, limestone outcrops.
OAK, NORTHERN RED <i>Quercus rubra</i>	All	Mostly Piedmont & W. Md.; uncommon on Coastal Plain	W - SP	35 ft.	Mod.	Medium to High	Low	High: same as above.	Excellent red fall color. Tolerates urban conditions.
OAK, OVERCUP <i>Quercus lyrata</i>	6a, 6b, 7a, 7b, 8a	Mostly Patuxent River valley & Charles Co.; uncommon	SP - P	30 ft.	Mod.	Medium to High	Low	High: same as above.	Important lumber tree. Withstands flooding and prolonged inundation.
OAK, PIN <i>Quercus palustris</i>	All	Statewide, except in Garrett Co.	MW - P	40 ft.	Fast	High	Medium	High: same as above.	Bronze or red fall foliage. Widely planted as an ornamental. Produces small acorns.
OAK, POST <i>Quercus stellata</i>	All	Statewide, except in Garrett Co.	W - SP	30 ft.	Mod.	Medium to High	Low	High: same as above.	Often occurs on dry ridges, including shale barrens and serpentine barrens. Also found on moist sites at lower elevations.
OAK, SAWTOOTH <i>Quercus acutissima</i>	All	Introduced; not native to U.S.	W - SP	60 ft.	Fast	Medium to High	Low	High: same as above.	Native to eastern Asia. Good shade tree. Tolerates adverse conditions.
OAK, SOUTHERN RED <i>Quercus falcata</i>	7a, 7b, 8a	Mostly Coastal Plain	W - SP	35 ft.	Mod.	Medium to High	Low	High: same as above.	Excellent red fall color. Tolerates poor, dry soil.
OAK, SWAMP CHESTNUT (BASKET OAK) <i>Quercus michauxii</i>	6a, 6b, 7a, 7b, 8a	Mostly Coastal Plain; infrequent elsewhere	SP - P	35 ft.	Mod.	Medium to High	Low	High: same as above.	Naturally occurring on floodplains and other wet areas. Important lumber tree.
OAK, SWAMP WHITE <i>Quercus bicolor</i>	All	Mostly Coastal Plain	SP - P	30 ft.	Mod.	Medium to High	Low	High: same as above.	Good choice for wet sites. Important lumber tree. Requires acid soils.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
OAK, WATER <i>Quercus nigra</i>	6b, 7a, 7b, 8a	Mostly Lower Eastern Shore	SP - P	30 ft.	Mod.	Medium to High	Low	High: acorns eaten by quail, turkey, grouse, squirrels, and deer.	Naturally occurring on floodplains and other wet areas, but can tolerate a wide range of conditions, including well-drained uplands. Produces small acorns.
OAK, WHITE <i>Quercus alba</i>	All	Statewide	W - SP	25 ft.	Slow	Medium to High	Low	High: same as above.	Variable fall color, stately tree. Important lumber tree.
OAK, WILLOW <i>Quercus phellos</i>	6b, 7a, 7b, 8a	Mostly Coastal Plain	MW - P	60 ft.	Fast	Medium to High	Low	High: same as above.	Frequently used as an ornamental planting. Produces small acorns. Red fall color.
OSAGE-ORANGE <i>Maclura pomifera</i>	All	Introduced: native to Midwestern U.S.	W - SP	20 ft.	Slow	High	Low	Low: seeds eaten quail and squirrels.	Adapted to a wide range of soil and site conditions. Trunk is usually short and divides into several prominent limbs. Fruits are messy, so select male plants. 'White Shield' may be the most thorn-free cultivar.
PAWPAW <i>Asimina triloba</i>	6a, 6b, 7a, 7b, 8a	Statewide; infrequent	MW - P	25 ft.	Slow	Medium	Low	High: important food for fox, raccoon, opossum; also turkey, songbirds, deer, and other mammals.	Suckers and forms colonies. Purple flowers; large yellow fruits. Host plant for zebra swallowtail larvae.
PECAN <i>Carya illinoensis</i>	All	Introduced; native to south-central U.S.	W - SP	35 ft.	Mod.	High	Low	High: nuts eaten by squirrels, turkey, quail, deer; browsed by deer.	Prefers moist, well-drained sites. Numerous cultivars are available for nut production.
PERSIMMON, COMMON <i>Diospyros virginiana</i>	All	Mostly Coastal Plain and Piedmont	E - P	25 ft.	Slow	Medium	Low	High: important food for fox, raccoon, opossum; also turkey, songbirds, deer, and other mammals.	Slow growing tree. Adaptable to a wide range of conditions. Attracts pollinators. Produces edible fruit.
PLUM, AMERICAN <i>Prunus americana</i>	All	Statewide	W - SP	20 ft.	Slow	High	Medium	High: fruits eaten by songbirds, grouse, turkey, quail; browsed by rabbits and deer.	Small tree or shrub, with thorny stems. Prefers full sun and mesic moisture conditions. Can sucker and form thickets. Provides cover for wildlife and attracts pollinators.
POPLAR, HYBRID <i>Populus deltoides x nigra</i> 'Spike'	All	Introduced; hybrid of U.S. and European species	MW - SP	40 ft.	Fast	Medium	Low	Unknown. Presumably similar to other species of <i>Populus</i> .	Sterile hybrid.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
POPLAR, TULIP <i>Liriodendron tulipifera</i>	All	Statewide	W - SP	40 ft.	Fast	Medium	Low	Low: seeds eaten by squirrels and songbirds; seedlings browsed by deer.	Flowers produce abundant nectar, much used by bees. Dropped flowers and fruits can be messy. Tends to be weak-wooded; not recommended near buildings. Important lumber tree.
REDBUD <i>Cercis canadensis</i>	All	Mostly Piedmont & W. Md.; infrequent elsewhere	MW -SP	20 ft.	Slow	Medium	Low	Low: seeds eaten by quail, pheasants, and deer.	Nitrogen-fixing. Bright pink flowers, appearing in early spring before the leaves, provide an early source of nectar/pollen for bees and other insects. Useful as an ornamental.
REDWOOD, DAWN <i>Metasequoia glyptostroboides</i>	All	Introduced; native to China	MW - P	35 ft.	Mod.	High	Medium	Low. Presumably similar to bald cypress.	Prefers moist soil but will tolerate drier sites. Needle-leaved deciduous tree; similar in appearance to bald cypress. Sometimes planted as an ornamental.
SASSAFRAS <i>Sassafras albidum</i>	All	Statewide; infrequent at higher elevations of Western Maryland	W - MW	20 ft.	Slow	Medium	Low	Medium: fruits eaten by songbirds, quail, turkey, and squirrels. Browsed by deer and rabbits.	Small tree; forms dense thickets by suckering. Greenish-yellow flowers are pollinated by small bees and other insects. Host plant for spicebush and tiger swallowtail larvae, as well as several species of moths.
SERVICEBERRY, CANADIAN <i>Amelanchier canadensis</i>	All	Mostly Coastal Plain	MW - P	20 ft.	Slow	High	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Small tree or shrub; usually multi-stemmed. Showy white flowers provide an early spring food source for bees, butterflies, and other pollinators. Also a food source for several species of butterfly and moth larvae. Produces purple-black fruits.
SERVICEBERRY, COMMON <i>Amelanchier arborea</i>	All	Statewide	W - P	20 ft.	Slow	High	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Small tree or shrub; single or multi-stemmed. Tolerates a wide range of moisture conditions. Other characteristics similar to Canadian serviceberry.
SERVICEBERRY, SMOOTH <i>Amelanchier laevis</i>	All	Mostly Piedmont and W. Md.	W - SP	20 ft.	Slow	Medium	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Small tree or shrub; usually multi-stemmed. Other characteristics similar to Canadian serviceberry.

TABLE 4.2: Selected Characteristics of Deciduous Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density - Summer ^{4/}	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
SWEETGUM <i>Liquidambar styraciflua</i>	6b, 7a, 7b, 8a	Mostly Coastal Plain	MW - P	40 ft.	Fast	Medium	Low	Low: seeds eaten by songbirds, squirrels, and chipmunks.	Excellent yellow-red fall color. Widely planted as an ornamental. Fallen seed heads are a nuisance on lawns. Fruitless types are available.
SYCAMORE <i>Platanus occidentalis</i>	All	Statewide; infrequent at higher elevations of Western Maryland	MW - P	65 ft.	Fast	Medium to High	Low	Low: seeds eaten by songbirds and squirrels.	Naturally occurring on streambanks and floodplains. Unique peeling bark, fast growth rate. Susceptible to anthracnose; mix with other species for disease control. Constantly drops leaves, twigs, and fruits. Good den tree.
TUPELO, SWAMP (SWAMP BLACK GUM) <i>Nyssa biflora</i>	6a, 6b, 7a, 7b, 8a	Eastern Shore	SP - P	35 ft.	Mod.	Medium to High	Low	Medium: fruits eaten by squirrels, quail, turkey, and songbirds. Browsed by deer.	Naturally occurring on streambanks, floodplains, and bottomland swamps. Foliage turns bright red in early fall.
WALNUT, BLACK <i>Juglans nigra</i>	All	Mostly Piedmont & W. Md.	MW - SP	40 ft.	Fast	Low	Low	Medium: nuts eaten by squirrels.	Very important lumber tree. Valuable for furniture and nut production. Nuts are large and sweet, with thick, hard shells; nuts are not easily accessible as food for most wildlife (except squirrels). Black walnut can be allelopathic to other plants.
WILLOW, BLACK <i>Salix nigra</i>	All	Statewide	SP - P	50 ft.	Fast	Medium	Low	Medium: browsed by grouse, beaver, and deer.	Naturally occurring on streambanks and floodplains. Can be aggressive and weedy. Flowers provide an early source of nectar/pollen in the spring for bees.
WILLOW, HYBRID <i>Salix matsudana x alba</i> 'Austree'	All	Introduced; hybrid of Chinese and European species	W - P	60 ft.	Very Fast	Medium to High	Medium	Unknown. Presumably similar to other willows.	Sterile hybrid. Due to its extremely fast growth (>3 ft/yr), can provide visual screen in 1 – 2 years. Dense branch structure.
WILLOW, PURPLEOSIER <i>Salix purpurea</i> 'Streamco'	All	Introduced from Europe	MW - P	20 ft.	Fast	Medium to High	Medium	Low: browsed by deer, beaver, and rabbits.	Non-invasive small tree or shrub; usually multi-stemmed. Streamco is a male clone, does not root sucker, and does not spread readily beyond the planting site.

Notes for this table are on Page 87.

TABLE 4.3: Recommended Evergreen Trees for Selected Uses (see Table 4.4 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}						Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/ infrequent inundation)	Wetlands (surface saturation/ frequent or prolonged inundation)		
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock			Wildlife Habitat	Screens/ Barriers
								Nesting/ Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/ Pollen	Foliage					
ARBORVITAE <i>Thuja occidentalis</i>	■	■		■	■	■	■	■	■								■		
ARBORVITAE <i>Thuja plicata x standishii</i> 'Green Giant'	■	■	■	■	■			■	■								■		
CEDAR, ATLANTIC WHITE <i>Chamaecyparis thyoides</i>			■		■	■	■	■	■		■						■		■
CEDAR, EASTERN RED <i>Juniperus virginiana</i>	■	■		■	■		■	■	■								■	■	
CYPRESS, LEYLAND <i>x Cupressocyparis leylandii</i>	■	■	■	■	■			■	■								■		
FIR, DOUGLAS <i>Pseudotsuga menziesii</i>	■	■		■	■		■	■	■								■		
HEMLOCK, EASTERN <i>Tsuga canadensis</i>	■	■		■	■		■	■	■		■						■	■	
HOLLY, AMERICAN <i>Ilex opaca</i>			■	■	■	■	■	■	■		■						■	■	■
PINE, AUSTRIAN <i>Pinus nigra</i>	■	■	■	■	■	■		■	■								■		
PINE, LOBLOLLY <i>Pinus taeda</i>			■		■	■	■	■	■		■			■			■	■	
PINE, PITCH <i>Pinus rigida</i>	■	■		■	■		■	■	■		■			■			■		
PINE, VIRGINIA <i>Pinus virginiana</i>	■	■	■	■	■		■	■	■		■			■			■		
PINE, WHITE <i>Pinus strobus</i>	■			■	■		■	■	■		■			■			■		
SPRUCE, NORWAY <i>Picea abies</i>	■	■	■	■	■			■	■								■		
SPRUCE, WHITE <i>Picea glauca</i>	■	■		■	■			■	■		■			■			■		

Notes for this table are on Page 86.

TABLE 4.4: Selected Characteristics of Evergreen Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
ARBORVITAE <i>Thuja occidentalis</i>	All	Western Maryland, along the Potomac River	W - P	25 ft.	Slow	Very High	Very High	Low: browsed by deer.	Frequently planted statewide as an ornamental. Prefers moist, well-drained soil, but tolerates a wide range of conditions. Prone to bagworms.
ARBORVITAE <i>Thuja plicata x standishii</i> 'Green Giant'	All	Introduced; hybrid of Western U.S. and Japanese species	W - MW	40 ft.	Fast	Very High	Very High	Low: browsed by deer.	Prefers well-drained soil, but tolerates a wide range of conditions. Bagworms are potential pests.
CEDAR, ATLANTIC WHITE <i>Chamaecyparis thyoides</i>	All	Lower Eastern Shore; uncommon	SP - P	20 ft.	Slow	Very High	Very High	Low: seeds eaten by songbirds; browsed by deer.	Cannot compete with hardwoods; best planted in solid stands.
CEDAR, EASTERN RED <i>Juniperus virginiana</i>	All	Mostly Piedmont & Western Maryland	W - SP	20 ft.	Slow	Very High	Very High	Medium: seeds eaten by songbirds, quail, turkey; browsed by deer and rabbits.	Should not be planted near apple orchards; alternate host of cedar-apple rust.
CYPRESS, LEYLAND <i>x Cupressocyparis leylandii</i>	6a, 6b, 7a, 7b, 8a	Introduced; not native to U.S.	W - SP	40 ft.	Very Fast	Very High	Very High	Low: browsed by deer.	This is a hybrid of <i>Cupressus macrocarpa</i> and <i>Chamaecyparis nootkatensis</i> . Adaptable to adverse sites; growth is best on good sites. Prone to bagworms, canker, and windthrow. Use in multiple-row plantings to minimize windthrow. Green Giant arborvitae is a preferred alternative to Leyland cypress.
FIR, DOUGLAS <i>Pseudotsuga menziesii</i>	5b, 6a, 6b	Introduced; native to Western U.S.	W - MW	40 ft.	Mod.	Medium	Medium	Low: browsed by deer.	Prefers deep, moist, well-drained soils. Often planted for Christmas trees.
HEMLOCK, EASTERN <i>Tsuga canadensis</i>	All	Mostly Piedmont & Western Maryland	W - SP	20 ft.	Slow	Very High	Very High	Medium: seeds eaten by songbirds and squirrels; browsed by deer.	Often planted as an ornamental. Can become infested with hemlock woolly adelgid, a serious insect pest.

TABLE 4.4: Selected Characteristics of Evergreen Trees

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
HOLLY, AMERICAN <i>Ilex opaca</i>	6a, 6b, 7a, 7b, 8a	Mostly Coastal Plain	W - P	20 ft.	Slow	High	High	Medium: fruits eaten by songbirds, quail, and squirrels.	Need male and female plants for fruit production. Shade tolerant. In hedgerows and windbreaks, can be planted in one row, and add one or more other rows of faster-growing species.
PINE, AUSTRIAN <i>Pinus nigra</i>	All	Introduced; not native to U.S.	E - P	35 ft.	Mod.	Low to Medium	Low to Medium	Unknown. Presumably similar to other pines.	Frequently planted statewide as an ornamental. Prefers moist, well-drained soil, but tolerates a wide range of conditions. Withstands dryness better than other pines. Fairly salt tolerant.
PINE, LOBLOLLY <i>Pinus taeda</i>	6b, 7a, 7b, 8a	Mostly Coastal Plain	MW - P	45 ft.	Fast	Low to Medium	Low to Medium	Medium: seeds eaten by songbirds, quail, turkey; browsed by deer and rabbits.	Self-prunes lower limbs, so best suited in a multiple-row planting.
PINE, PITCH <i>Pinus rigida</i>	5b, 6a, 6b	Mostly Piedmont & W. Md.	W - SP	30 ft.	Mod.	Low to Medium	Low to Medium	Medium: seeds eaten by songbirds, quail, grouse, turkey; browsed by deer and rabbits.	Tolerant of dry, rocky, sandy soils. Mature trees are resistant to fire. Will reproduce from stump sprouts.
PINE, VIRGINIA <i>Pinus virginiana</i>	All	Statewide	W - MW	30 ft.	Mod.	Low to Medium	Low to Medium	Medium: same as above.	Can be used for pulpwood. Tolerant of adverse site conditions.
PINE, WHITE <i>Pinus strobus</i>	All	Mostly Western Maryland	W - MW	40 ft.	Fast	Low to Medium	Low to Medium	Medium: same as above.	Frequently planted statewide as an ornamental.
SPRUCE, NORWAY <i>Picea abies</i>	All	Introduced; not native to U.S.	W - MW	35 ft.	Mod.	High	High	Unknown. Presumably similar to white spruce.	Fast growth rate when young, slows down with age. Prefers moderately moist, well-drained soil. Often planted as an ornamental.
SPRUCE, WHITE <i>Picea glauca</i>	5b, 6a, 6b	Introduced; native to Northern U.S.	W - MW	30 ft.	Mod.	High	High	Medium: seeds eaten by songbirds, grouse; browsed by deer and rabbits.	Good ornamental and shade tree. Tolerates heat, drought, and wind better than most spruces.

Notes for this table are on Page 87.

TABLE 4.5: Recommended Shrubs and Woody Vines for Selected Uses (see Table 4.6 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}							Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/ infrequent inundation)	Wetlands (surface saturation/ frequent or prolonged inundation)	
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock	Wildlife Habitat			Screens/ Barriers
								Nesting/ Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/ Pollen	Foliage					
ABELIA, GLOSSY <i>Abelia x grandiflora</i>	■	■	■	■	■			■	■				■				■		
ALDER, SMOOTH <i>Alnus serrulata</i>	■	■	■		■	■	■	■	■	■					■	■			■
ALDER, SPECKLED <i>Alnus incana ssp. rugosa</i> (<i>Alnus rugosa</i>)	■				■	■	■	■	■						■	■			■
ARROWWOOD <i>Viburnum dentatum</i>	■	■	■	■	■	■	■	■	■						■	■		■	
AZALEA, SWAMP <i>Rhododendron viscosum</i>	■	■	■		■	■	■	■					■	■	■			■	
BARBERRY, AMERICAN <i>Berberis canadensis</i>	■			■	■		■	■				■	■		■	■			
BAYBERRY, NORTHERN <i>Morella pensylvanica</i> (<i>Myrica pensylvanica</i>)			■	■	■	■	■	■	■						■	■		■	
BEAUTYBERRY, AMERICAN <i>Callicarpa americana</i>			■	■	■		■	■	■				■		■	■			
BLACKBERRY, ALLEGHENY <i>Rubus allegheniensis</i>	■	■		■	■		■	■	■				■	■	■	■			
BLACKBERRY, SAND <i>Rubus cuneifolius</i>			■	■	■		■	■	■				■	■	■				
BLACK-HAW <i>Viburnum prunifolium</i>	■	■	■	■	■		■	■	■						■	■			
BLUEBERRY, HIGHBUSH <i>Vaccinium corymbosum</i>			■		■	■	■	■	■				■	■	■	■		■	
BLUEBERRY, LOWBUSH <i>Vaccinium angustifolium</i>	■	■		■	■		■	■	■				■	■	■				
BUSH, HIGH TIDE (GROUNDSEL) <i>Baccharis halimifolia</i>			■		■	■	■	■								■		■	
BUSH, HIGH TIDE (MARSH-ELDER) <i>Iva frutescens</i>			■		■	■	■	■								■		■	

TABLE 4.5: Recommended Shrubs and Woody Vines for Selected Uses (see Table 4.6 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}							Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/ infrequent inundation)	Wetlands (surface saturation/ frequent or prolonged inundation)	
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock	Wildlife Habitat			Screens/ Barriers
								Nesting/ Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/ Pollen	Foliage					
BUTTONBUSH <i>Cephalanthus occidentalis</i>	■	■	■		■	■	■	■	■					■				■	
CHOKEBERRY, BLACK <i>Aronia melanocarpa</i>	■	■	■		■	■	■	■	■		■	■			■			■	
CHOKEBERRY, RED <i>Aronia arbutifolia</i>	■	■	■		■	■	■	■	■		■	■			■			■	
CRANBERRYBUSH, AMERICAN <i>Viburnum opulus var. americanum (Viburnum trilobum)</i>	■				■	■	■	■	■		■	■			■			■	
DEWBERRY, BRISTLY <i>Rubus hispidus</i>	■	■	■			■	■	■			■	■		■				■	
DEWBERRY, COMMON <i>Rubus flagellaris</i>	■	■	■		■	■	■	■			■	■							
DOGWOOD, GRAY <i>Cornus racemosa</i>	■	■			■	■	■	■	■						■		■		
DOGWOOD, REDOSIER <i>Cornus sericea</i>	■	■	■		■	■	■	■	■						■		■	■	
DOGWOOD, SILKY <i>Cornus amomum</i>	■	■	■		■	■	■	■	■						■		■		
DOGWOOD, STIFF <i>Cornus foemina</i>			■		■	■	■	■	■						■		■		
ELDERBERRY <i>Sambucus nigra ssp. canadensis (Sambucus canadensis)</i>	■	■	■		■	■	■	■	■			■		■	■		■		
EUONYMUS, SPREADING <i>Euonymus kiautschovicus 'Manhattan'</i>	■	■	■		■	■	■	■	■								■		
FETTERBUSH <i>Eubotrys racemosa (Leucothoe racemosa)</i>			■		■	■	■	■	■				■				■	■	
GOOSEBERRY, APPALACHIAN <i>Ribes rotundifolium</i>	■	■			■	■	■	■	■		■	■			■		■		

TABLE 4.5: Recommended Shrubs and Woody Vines for Selected Uses (see Table 4.6 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}							Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/ infrequent inundation)	Wetlands (surface saturation/ frequent or prolonged inundation)	
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock	Wildlife Habitat			Screens/ Barriers
								Nesting/ Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/ Pollen	Foliage					
GOOSEBERRY, PRICKLY <i>Ribes cynosbati</i>	■	■		■	■		■	■	■		■	■	■	■		■			
GRAPE, FOX <i>Vitis labrusca</i>	■	■	■	■	■		■	■	■	■					■				
GRAPE, MUSCADINE <i>Vitis rotundifolia</i>			■		■	■	■	■	■						■		■		
GRAPE, RIVERBANK <i>Vitis riparia</i>	■	■	■			■	■	■	■						■		■		
HAZELNUT (AMERICAN FILBERT) <i>Corylus americana</i>	■	■	■	■	■		■	■	■						■	■			
HAZELNUT, BEAKED <i>Corylus cornuta</i>	■	■	■	■	■		■	■	■						■	■			
HUCKLEBERRY, BLACK <i>Gaylussacia baccata</i>	■	■	■	■	■	■	■	■	■			■	■		■		■		
HUCKLEBERRY, BLUE <i>Gaylussacia frondosa</i>	■	■	■	■	■	■	■	■	■			■	■		■		■		
HOLLY, JAPANESE <i>Ilex crenata</i> 'Steeds'	■	■	■		■			■	■							■			
HOLLY, NELLIE STEVENS <i>Ilex cornuta x aquifolium</i> 'Nellie Stevens'	■	■	■		■			■	■							■			
INDIGO, FALSE (INDIGO BUSH) <i>Amorpha fruticosa</i>	■	■	■	■	■	■	■	■	■			■			■	■	■		
INKBERRY <i>Ilex glabra</i>			■		■	■	■	■	■						■	■		■	
LESPEDEZA, SHRUB <i>Lespedeza bicolor</i>		■	■	■	■			■	■							■			
MEADOWSWEET, WHITE <i>Spiraea alba</i>	■	■	■		■	■	■	■	■			■	■		■	■	■		
NINEBARK, COMMON <i>Physocarpus opulifolius</i>	■	■	■	■	■	■	■	■	■			■			■	■	■		

TABLE 4.5: Recommended Shrubs and Woody Vines for Selected Uses (see Table 4.6 for detailed species information)

Plant Names	Region ^{1/}			Moisture ^{2/}			Native to MD	Habitat Use Characteristics ^{3/}							Hedgerows and Windbreaks ^{4/}		Wetlands (surface saturation/infrequent inundation)	Wetlands (surface saturation/frequent or prolonged inundation)	
	Mountains	Piedmont	Coastal Plain	Dry Sites	Mesic Sites	Wet Sites		Cover		Fruit/Seed Consumption			Pollinator Food		Toxic to Livestock	Wildlife Habitat			Screens/Barriers
								Nesting/Resting	Protection	Wildlife (H)	Wildlife (M)	Humans	Nectar/Pollen	Foliage					
PEPPERBUSH, SWEET <i>Clethra alnifolia</i>			■		■	■	■	■	■				■			■	■	■	
POSSUM-HAW <i>Viburnum nudum</i>			■		■	■	■	■	■		■	■				■	■	■	
RAISIN, WILD <i>Viburnum nudum</i> var. <i>cassinoides</i>					■	■	■	■		■	■					■	■	■	
RASPBERRY, AMERICAN RED <i>Rubus idaeus</i>					■		■	■	■		■	■				■	■		
RASPBERRY, BLACK <i>Rubus occidentalis</i>	■	■	■	■	■		■	■	■	■		■	■			■	■		
ROSE, CAROLINA <i>Rosa carolina</i>	■	■	■	■	■		■	■	■		■	■				■	■		
ROSE, SWAMP <i>Rosa palustris</i>	■	■	■		■	■	■	■	■		■	■				■	■		■
ROSE, VIRGINIA <i>Rosa virginiana</i>	■	■	■	■	■		■	■	■		■	■				■	■		
SPICEBUSH <i>Lindera benzoin</i>	■	■	■		■	■	■	■	■				■			■	■	■	
STEEPLEBUSH <i>Spiraea tomentosa</i>	■	■	■		■	■	■	■				■	■			■	■	■	
SWEETSPIRE, VIRGINIA <i>Itea virginica</i>			■		■	■	■	■				■				■	■	■	
VIBURNUM, MAPLE-LEAF <i>Viburnum acerifolium</i>	■			■	■		■	■		■	■					■	■		
WAXMYRTLE, SOUTHERN <i>Morella cerifera</i> (<i>Myrica cerifera</i>)			■	■	■	■	■	■	■							■	■	■	
WINTERBERRY <i>Ilex verticillata</i>	■	■	■		■	■	■	■	■							■	■	■	
WITCH-HAZEL <i>Hamamelis virginiana</i>	■	■	■	■	■		■	■				■				■	■		

Notes for this table are on Page 86.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
ABELIA, GLOSSY <i>Abelia x grandiflora</i>	All	Introduced; not native to U.S.	W - SP	6 ft.	Fast	High	Medium	Low: generally not browsed by wildlife.	Semi-evergreen foliage. Stems may be killed to the ground in cold winters. No serious pests or diseases. Many cultivars are available with different height and width characteristics. Rosy-white flowers attract pollinators.
ALDER, SMOOTH <i>Alnus serrulata</i>	All	Statewide; less common on Coastal Plain	SP - P	10 ft.	Fast	Medium	Low	High: seeds eaten by ducks, quail, doves; browsed by deer, beaver.	Nitrogen-fixing. Attractive catkins. Provides good cover for woodcock.
ALDER, SPECKLED <i>Alnus incana</i> ssp. <i>rugosa</i> (<i>Alnus rugosa</i>)	5b, 6a, 6b	Only in Western Maryland; uncommon	SP - P	15 ft.	Fast	Medium to High	Low to Medium	High: seeds eaten by ducks, quail, doves; browsed by deer, beaver.	Nitrogen-fixing. Attractive catkins. Provides good cover for woodcock.
ARROWWOOD <i>Viburnum dentatum</i>	All	Statewide	W - P	10 ft.	Fast	Medium	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Suckers freely; wood used to make arrows. White flowers, bluish-black berries. Attracts pollinators.
AZALEA, SWAMP <i>Rhododendron viscosum</i>	All	Statewide	SP - P	8 ft.	Slow	Low	Low	Low: nectar attractive to hummingbirds; plants browsed by deer.	Naturally occurring in shrub swamps, forested wetlands, and on streambanks. Showy pink-white tubular flowers attract pollinators.
BARBERRY, AMERICAN <i>Berberis canadensis</i>	5b, 6a, 6b	Western Maryland; uncommon	W - MW	6 ft.	Mod.	High	Medium	Low: fruits eaten by pheasant and songbirds.	Occurs in dry forests and open fields. Spiny stems and branches. Similar in appearance to the frequently planted Japanese barberry (<i>B. thunbergii</i>), which is listed as an invasive species. Small yellow flowers attract bees and other pollinators. Red berries often persist until spring.
BAYBERRY, NORTHERN <i>Morella pensylvanica</i> (<i>Myrica pensylvanica</i>)	6b, 7a, 7b, 8a	Coastal Plain	W - P	10 ft.	Mod.	Medium	Low	High: fruits eaten by quail, songbirds. Browsed by deer.	Need male and female plants for fruit production. Waxy berries may persist through winter. Salt tolerant (0-20 ppt.) Suckers to form colonies.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
BEAUTYBERRY, AMERICAN <i>Callicarpa americana</i>	7a, 7b, 8a	Coastal Plain; uncommon	W - SP	6 ft.	Mod.	High	Medium	High: fruits eaten by quail, songbirds, squirrels. Browsed by deer.	Occurs on woodland edges and in openings, thickets, and fence rows; intolerant of deep shade. Adapted to a wide range of upland sites. Attracts pollinators. Produces clusters of attractive, pink-purple berries along the stems.
BLACKBERRY, ALLEGHENY <i>Rubus allegheniensis</i>	All	Mostly Piedmont and W. Md.	W - SP	6 ft.	Fast	High	Medium	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Arching stems (canes) can develop into dense, thorny thickets. White flowers attract pollinators, and produce purplish black berries.
BLACKBERRY, SAND <i>Rubus cuneifolius</i>	7a, 7b, 8a	Mostly Coastal Plain	W - SP	3 ft.	Fast	High	Medium	High: fruits eaten by turkey, songbirds, squirrels; browsed by rabbits, deer.	Same as above.
BLACK-HAW <i>Viburnum prunifolium</i>	All	Statewide	W - SP	12 ft.	Fast	Medium	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	White flower clusters, blue berries, red fall color. Fruits may remain on shrubs for much of the winter.
BLUEBERRY, HIGHBUSH <i>Vaccinium corymbosum</i>	All	Coastal Plain	MW - P	12 ft.	Mod.	Medium to High	Low to Medium	High: fruits eaten by songbirds, turkey, squirrel; browsed by deer, rabbits.	Prefers acid soils. Small white flowers attract bees.
BLUEBERRY, LOWBUSH <i>Vaccinium angustifolium</i>	All	Mostly Piedmont and W. Md.	W - SP	2 ft.	Mod.	Medium to High	Low to Medium	High: fruits eaten by songbirds, turkey, squirrel; browsed by deer, rabbits.	Same as above.
BUSH, HIGH TIDE (GROUNDSEL) <i>Baccharis halimifolia</i>	7a, 7b, 8a	Coastal Plain	MW - P	10 ft.	Mod.	Medium	Low	Low: minimal value for food; occasionally browsed by deer.	Usually in brackish and coastal marshes, above MHW. Salinity 0-15 ppt. Has fluffy white seeds. Male flowers & female flowers on separate plants. Prefers full sun.
BUSH, HIGH TIDE (MARSH-ELDER) <i>Iva frutescens</i>	7a, 7b, 8a	Coastal Plain	MW - P	10 ft.	Mod.	Medium	Low	Low: minimal value for food; occasionally browsed by deer.	Usually in brackish and coastal marshes, above MHW. Salinity 0-15 ppt. Prefers full sun.
BUTTONBUSH <i>Cephalanthus occidentalis</i>	6a, 6b, 7a, 7b, 8a	Statewide	SP - P	10 ft.	Mod.	Medium	Low	Low: seeds eaten by ducks and rails; browsed by deer.	Unusual, round white flowers. Tolerates extended periods of flooding and ponding. Prefers permanent saturation. Attracts butterflies and other insects.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
CHOKEBERRY, BLACK <i>Aronia melanocarpa</i>	All	Statewide; more common in Western Maryland	W – P	6 ft.	Mod.	Medium	Low	Medium: fruits eaten by songbirds, grouse, bear, squirrel; browsed by deer, rabbits.	White flowers in spring. Lush summer foliage. Black berries in late summer persist into winter. Colorful red foliage in fall. Suckers and forms thickets. Tolerant of a wide range of soil and moisture conditions. Attracts small bees.
CHOKEBERRY, RED <i>Aronia arbutifolia</i>	All	Statewide	W – P	10 ft.	Mod.	Medium	Low	Medium: fruits eaten by songbirds, grouse, bear, squirrel; browsed by deer, rabbits.	Similar to black chokeberry, but with red berries, and slightly taller and more upright growth habit. Attracts small bees.
CRANBERRYBUSH, AMERICAN <i>Viburnum opulus</i> var. <i>americanum</i> (<i>Viburnum trilobum</i>)	5b, 6a, 6b, 7a	Native to No. U.S.; probably occurs in W. Md.	MW -P	6 ft.	Slow	Medium	Low	Medium: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Multi-stemmed shrub that does not form thickets by suckering. Bright red berries often persist throughout the winter. Sometimes planted as an ornamental.
DEWBERRY, BRISTLY <i>Rubus hispidus</i>	All	Statewide	SP – P	1 ft.	Fast	Medium	Low	High: berries eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	More like a vine than a shrub. Very low-growing, with long, trailing stems; in moist woods and wetlands. White flowers attract pollinators, and produce small, reddish-purple berries.
DEWBERRY, COMMON <i>Rubus flagellaris</i>	All	Statewide	W – MW	2 ft.	Fast	Medium	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	More like a vine than a shrub. Mostly low, trailing stems (less than 1 foot tall), but flowering stems can be taller. White flowers attract pollinators, and produce small, reddish-purple berries.
DOGWOOD, GRAY <i>Cornus racemosa</i>	5b, 6a, 6b, 7a	Mostly Piedmont and Western Maryland	W – SP	6 ft.	Mod.	High	Medium	High: fruits eaten by songbirds, grouse, turkey, quail, squirrels; browsed by deer, rabbits.	Low growing, thickly branched shrub. Suckers and forms thickets. Not well adapted to the Coastal Plain. Beneficial for wildlife and pollinators.
DOGWOOD, REDOSIER <i>Cornus sericea</i>	All	Statewide; uncommon	MW - P	12 ft.	Mod.	Medium	Low	High: fruits eaten by songbirds, grouse, turkey, quail, squirrels; browsed by deer, rabbits.	Attractive red stem color. White flowers and fruit. Attracts pollinators.
DOGWOOD, SILKY <i>Cornus amomum</i>	All	Statewide; common on Coastal Plain & Piedmont	MW - P	10 ft.	Mod.	Medium to High	Low to Medium	High: fruits eaten by songbirds, grouse, turkey, quail, squirrels; browsed by deer, rabbits.	Produces fruit at 3-5 years of age. White flowers with blue berries. Prefers some shade. Attracts pollinators.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density - Summer ^{4/}	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
DOGWOOD, STIFF <i>Cornus foemina</i>	7a, 7b, 8a	Mostly Coastal Plain	MW - P	15 ft.	Mod.	Medium	Low	High: fruits eaten by songbirds, turkey, quail, squirrels; browsed by deer, rabbits.	Usually occurs in wetlands and on streambanks. Suckers and forms thickets. Moderately salt-tolerant. White flowers produce blue berries. Attracts pollinators.
ELDERBERRY <i>Sambucus nigra</i> ssp. <i>canadensis</i> (<i>Sambucus canadensis</i>)	All	Statewide	MW - P	8 ft.	Fast	Medium	Low	High: fruits eaten by songbirds, turkey, squirrels; browsed by deer, rabbits.	Large clusters of white flowers followed by purple berries; fast growth rate. Suckers freely. Attracts bees.
EUONYMUS, SPREADING <i>Euonymus kiautschovicus</i> 'Manhattan'	All	Introduced; not native to U.S.	W - SP	10 ft.	Mod.	High	High	Low: fruits eaten by songbirds; browsed by deer.	Semi-evergreen foliage that may be damaged in cold winters. Not as susceptible to scale as other euonymus. Attracts pollinators.
FETTERBUSH <i>Eubotrys racemosa</i> (<i>Leucothoe racemosa</i>)	6a, 6b, 7a, 7b, 8a	Mostly Coastal Plain; common	SP - P	12 ft.	Mod.	Medium to High	Low to Medium	Low: seeds eaten by songbirds; browsed by deer.	Small white flowers in drooping racemes. Tends to sucker and form thickets. Prefers permanent saturation.
GOOSEBERRY, APPALACHIAN <i>Ribes rotundifolium</i>	5b, 6a, 6b, 7a	Mostly Piedmont & W. Md.	W - MW	6 ft.	Mod.	High	Medium	Medium: fruits eaten by songbirds, grouse, turkey, squirrels; browsed by deer.	Stems may or may not have prickles. Gooseberries are alternate hosts of white pine blister rust; do not plant near white pines. Clusters of white, tubular flowers produce purple berries. Attracts bees and other pollinators.
GOOSEBERRY, PRICKLY <i>Ribes cynosbati</i>	5b, 6a, 6b, 7a	Mostly Piedmont & W. Md.	W - SP	4 ft.	Mod.	High	Medium	Medium: fruits eaten by songbirds, grouse, turkey, squirrels; browsed by deer.	Same as above, but with prickly stems.
GRAPE, FOX <i>Vitis labrusca</i>	All	Statewide	W - SP	20 ft. (in trees)	Fast	Medium	Low	High: fruits eaten by songbirds, grouse, turkey, squirrels; browsed by deer, rabbits.	Vine that climbs up tree trunks and sprawls over shrubs. Commonly found in thickets and fence rows, and along woodland edges.
GRAPE, MUSCADINE <i>Vitis rotundifolia</i>	7a, 7b, 8a	Mostly Coastal Plain	MW - P	20 ft. (in trees)	Fast	Medium	Low	High: fruits eaten by songbirds, turkey, squirrels; browsed by deer, rabbits.	Similar to above, but prefers moist to wet sites.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
GRAPE, RIVERBANK <i>Vitis riparia</i>	All	Statewide	SP - P	20 ft. (in trees)	Fast	Medium	Low	High: fruits eaten by songbirds, grouse, turkey, squirrels; browsed by deer, rabbits.	Vine that climbs up tree trunks and sprawls over shrubs. Commonly found in thickets and fence rows, and along woodland edges.
HAZELNUT (AMERICAN FILBERT) <i>Corylus americana</i>	All	Statewide	W - SP	10 ft.	Mod.	Medium	Low	Medium: seeds eaten by grouse, turkey, squirrels; browsed by deer, rabbits.	Thicket-forming. Good ornamental; not many diseases/pests. Monecious flowers (needs both male and female plants to produce nuts).
HAZELNUT, BEAKED <i>Corylus cornuta</i>	5a, 6a, 6b	Western Maryland	W - SP	15 ft.	Mod.	High	Medium	Medium: seeds eaten by grouse, turkey, squirrels; browsed by deer, rabbits.	Same as above.
HOLLY, JAPANESE <i>Ilex crenata</i> 'Steeds'	6a, 6b, 7a, 7b, 8a	Introduced; not native to U.S.	MW -SP	8 ft.	Fast	High	High	Low: fruits eaten by songbirds.	Evergreen. Need male and female plants for fruit production.
HOLLY, NELLIE STEVENS <i>Ilex cornuta x aquifolium</i> 'Nellie Stevens'	6a, 6b, 7a, 7b, 8a	Introduced; not native to U.S.	MW -SP	15 ft.	Fast	High	High	Low: fruits eaten by songbirds.	Evergreen. Need male and female plants for fruit production.
HUCKLEBERRY, BLACK <i>Gaylussacia baccata</i>	All	Statewide	W - P	3 ft.	Mod.	High	Medium	High: fruits eaten by songbirds, grouse, quail, turkey, squirrels; browsed by deer.	Overall appearance is very similar to highbush blueberry. Forms thickets. Berries are edible but seedier than blueberries. Small flowers attract bees and other pollinators.
HUCKLEBERRY, BLUE (DANGLEBERRY) <i>Gaylussacia frondosa</i>	All	Statewide; mostly on Coastal Plain	W - P	4 ft.	Mod.	High	Medium	High: fruits eaten by songbirds, grouse, quail, turkey, squirrels; browsed by deer.	Same as above.
INDIGO, FALSE (INDIGO BUSH) <i>Amorpha fruticosa</i>	All	Statewide; uncommon	W - P	6 ft.	Slow	Medium to High	Low	Medium: seeds eaten by quail, turkey, and doves; browsed by deer.	Nitrogen-fixing multi-stemmed shrub. Flowers in purple spikes during late spring; attracts pollinators. Tolerates a wide range of moisture conditions, from seasonal saturation to drought. Individual plants may have a limited life span (5-10 years), but naturally regenerate from seed.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
INKBERRY <i>Ilex glabra</i>	6a, 6b, 7a, 7b, 8a	Coastal Plain	SP - P	6 ft.	Slow	Medium	Low	High: fruits eaten by songbirds, quail, and squirrels.	Black fruits persist during the winter. Extensive rhizomes, often forms colonies. Prefers permanent saturation.
LESPEDEZA, SHRUB <i>Lespedeza bicolor</i>	6b, 7a, 7b, 8a	Introduced; not native to U.S.	E - SP	8 ft.	Fast	Medium	Low	Low: seeds eaten by songbirds.	Perennial semi-woody legume. Cut back periodically to maintain dense, shrubby growth. May become weedy in some habitats and may displace desirable vegetation if not properly managed. Does not tolerate shade or wet soils.
MEADOWSWEET, WHITE <i>Spiraea alba</i>	All	Statewide	SP - P	6 ft.	Mod.	High	Medium	Low: seeds eaten by songbirds; browsed by deer and rabbits.	Deciduous upright shrub. Prefers moist to wet sites. Clusters of white flowers in summer attract pollinators. Host plant for butterfly and moth larvae.
NINEBARK, COMMON <i>Physocarpus opulifolius</i>	All	Statewide	W - P	10 ft.	Slow	High	Medium	Medium: fruits eaten by songbirds.	Deciduous upright, spreading shrub. Adaptable to a wide range of soil and moisture conditions. Cultivars commonly used in landscape plantings. White flowers in spring attract pollinators.
PEPPERBUSH, SWEET <i>Clethra alnifolia</i>	All	Coastal Plain	MW - P	10 ft.	Mod.	Medium	Low	Low: seeds eaten by songbirds; browsed by deer.	Showy, fragrant white flower spikes in mid-summer, often when other flowers and nectar are less abundant. Many cultivars available. Attracts pollinators.
POSSUM-HAW <i>Viburnum nudum</i>	All	Mostly Coastal Plain	SP - P	12 ft.	Mod.	Medium	Low	Medium: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	White flower clusters, red berries, red fall color. Fruits may remain on shrubs for much of the winter.
RAISIN, WILD <i>Viburnum nudum</i> var. <i>cassinoides</i>	All	Mostly Western Maryland	SP - P	8 ft.	Mod.	Medium	Low	Medium: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	White flower clusters, black berries. Fruits may remain on shrubs for much of the winter. Reddish-purple foliage in fall.
RASPBERRY, AMERICAN RED <i>Rubus idaeus</i>	All	Mostly Western Maryland	MW - SP	6 ft.	Fast	High	Medium	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Arching stems (canes) can develop into dense, thorny thickets. White flowers attract pollinators, and produce red berries.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
RASPBERRY, BLACK <i>Rubus occidentalis</i>	All	Statewide	W - SP	6 ft.	Fast	High	Medium	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Arching stems (canes) can develop into dense, thorny thickets. White flowers attract pollinators, and produce black berries.
ROSE, CAROLINA <i>Rosa carolina</i>	All	Statewide	W - MW	3 ft.	Mod.	High	Medium	High: fruits eaten by songbirds; browsed by deer.	Occurs on field edges and in pastures; forms thorny thickets. Pink flowers attract bees and other pollinators. Red fruits may remain for much of the winter.
ROSE, SWAMP <i>Rosa palustris</i>	All	Statewide; more common on Coastal Plain	SP - P	6 ft.	Mod.	Medium	Low	High: fruits eaten by songbirds; browsed by deer.	Prefers wetlands with permanent saturation and full sun; forms thorny thickets. Pink flowers attract bees and other pollinators. Red fruits may remain for much of the winter.
ROSE, VIRGINIA <i>Rosa virginiana</i>	All	Statewide	W - SP	6 ft.	Mod.	High	Medium	High: fruits eaten by songbirds; browsed by deer.	Occurs on field edges and in pastures; forms thorny thickets. Pink flowers attract bees and other pollinators. Red fruits may remain for much of the winter.
SPICEBUSH <i>Lindera benzoin</i>	All	Statewide	MW - P	12 ft.	Slow	Medium	Low	High: fruits eaten by songbirds (especially thrushes) and small mammals; browsed by rabbits, deer.	Fragrant leaves and twigs; yellow fall color. Bright red berries. Leaves are a main food source for larvae of spicebush and eastern tiger swallowtail butterflies, and prometheus moths.
STEEPLEBUSH <i>Spiraea tomentosa</i>	All	Statewide; more common on Coastal Plain	SP -P	6 ft.	Mod.	High	Medium	Low: seeds eaten by songbirds; browsed by deer and rabbits.	Deciduous upright shrub. Spreads by root suckering. Prefers moist to wet sites; acidic soils. Terminal clusters of pink flowers in summer attract pollinators. Host plant for butterfly and moth larvae.
SWEETSPIRE, VIRGINIA <i>Itea virginica</i>	6a, 6b, 7a, 7b, 8a	Coastal Plain	SP - P	8 ft.	Mod.	Medium	Low	Low: seeds eaten by songbirds; foliage and twigs not generally browsed by wildlife.	Small white flowers in elongated clusters up to 6 inches long. Prefers permanent saturation. Attracts pollinators.
VIBURNUM, MAPLE-LEAF <i>Viburnum acerifolium</i>	All	Mostly Western Maryland	W -SP	6 ft.	Slow	Medium	Low	High: fruits eaten by turkey, grouse, songbirds, squirrels; browsed by rabbits, deer.	Suckers freely. Yellow to red fall color; white flower clusters. Bright red berries.

TABLE 4.6: Selected Characteristics of Shrubs and Woody Vines

Plant Names	Plant Hardiness Zones ^{1/}	Natural Distribution in Maryland ^{1/}	Soil Drainage Class ^{2/}	Height at 20 Years	Growth Rate ^{3/}	Density ^{4/} -Summer	Density - Winter	Wildlife Food Value for Birds and Mammals	Remarks
WAXMYRTLE, SOUTHERN <i>Morella cerifera</i> (<i>Myrica cerifera</i>)	7a, 7b, 8a	Coastal Plain	W - P	10 ft.	Mod.	Medium	Medium	Medium: fruits eaten by quail, songbirds; browsed by deer.	Evergreen. Need male and female plants for fruit production. Salt tolerant (0-10 ppt).
WINTERBERRY <i>Ilex verticillata</i>	All	Statewide; less common on Coastal Plain	SP - P	10 ft.	Mod.	Medium to High	Low to Medium	Medium: fruits eaten by songbirds, quail, and squirrels.	Need male and female plants for fruit production. Bright red berries persist after leaves drop.
WITCH-HAZEL <i>Hamamelis virginiana</i>	All	Statewide; less common on Coastal Plain	W - SP	15 ft.	Slow	Medium	Low	Low: seeds eaten by grouse and squirrels; browsed by deer.	Bark is used for making witch-hazel lotion. Blooms in the fall; fragrant yellow flowers attract bees and other pollinators. .

Notes for this table are on Page 87.

TABLES 4.1, 4.3, 4.5 NOTES:

1. **Region:** The physiographic region where the species usually occurs in Maryland, under natural conditions. For introduced species, this is the region where the species can be planted. Native species may also be planted in other locations, based on Plant Hardiness Zones (PHZ). Refer to Tables 4.2, 4.4, and 4.6 for PHZ and other information for each species.
2. **Moisture:** The amount of moisture the species needs or tolerates. Dry - excessively drained to well-drained soil; Mesic - moderately well to somewhat poorly drained soil; Wet - poorly to very poorly drained soil.

3. Habitat Use Characteristics:

Cover - All plants provide some type of cover for wildlife, depending on the time of year and the wildlife species of interest. These columns describe the cover use primarily for birds and small mammals, as follows:

- Nesting/Resting - Provides nesting and/or resting cover.
- Protection - Provides protective habitat, typically characterized by high stem density near ground level and/or dense, persistent foliage (usually evergreens, but also some deciduous species that retain leaves well into the winter).

Fruit/Seed Consumption - These columns note whether a fruit or seed is a good food source for wildlife, or may be eaten by humans:

- Wildlife - (H) Highly preferred food for many birds and mammals, or (M) Medium value, and is utilized by fewer species or is produced in smaller quantities than similar foods. Plant species not noted as having High or Medium value have Low or unknown value. Refer to Tables 4.2, 4.4, and 4.6 for detailed wildlife food value information.
- Humans - May be consumed by people. Caution: This list should not solely be relied upon for knowledge of human edibility. Many plants with palatable parts also contain parts that are to a certain degree toxic to humans. Toxicity effects can vary with people and environment, and not all human toxicity effects are known for wild plants. People who intend to consume parts of wild plants should ensure their own safety and health by consulting experts and/or trusted plant references.

Pollinator Food - These columns note whether a species provides a food source for adult and larval-stage pollinators:

- Nectar/Pollen - Species produces nectar and/or pollen that are consumed by adults or larvae of various pollinator species.
- Foliage - Species has vegetative plant parts (foliage, stems, etc.) that are consumed by various insect pollinators, especially while in the larval stage.

Toxic to Livestock - Reported to be slightly to highly toxic if consumed by livestock. Toxicity may include flowers, fruits/nuts, foliage, and other plant parts, and can vary with species of livestock, age of the animal, and growth stage of the plant.

4. Hedgerows and Windbreaks:

Wildlife Habitat - Species is a recommended planting for wildlife habitat. Recommended species are native to Maryland, and are shrubs and small trees that have moderate to high value as food for birds, mammals, and/or pollinators.

Screens/Barriers - Species is a recommended planting for visual screens and/or barriers to noise, dust, and odors. Recommended species are expected to grow to at least 6 feet in height at 20 years, and have a medium or high foliar density for at least part of the year. For year-round protection, most screens/barriers will need one or more rows of evergreens. Shorter or less dense species may be selected for planting in additional rows, provided there are sufficient rows of recommended species to meet the objectives of the planting.

Note: For hedgerows around poultry houses, especially in fan impact areas, refer to the Maryland NRCS 422 Hedgerow Planting Fact Sheet *Trees and Shrubs for Poultry Houses* for recommended woody species that are tolerant of harsh conditions.

TABLES 4.2, 4.4, and 4.6 NOTES:

1. The Plant Hardiness Zones designate where a species can be successfully planted in Maryland, while the Geographic Distribution describes where the species usually occurs under natural conditions.
2. Soil Drainage Class (refer to the county soil survey for further information):
E - Excessively Drained; W - Well Drained; MW - Moderately Well Drained; SP - Somewhat Poorly Drained; P - Poorly Drained.
3. Growth Rate: Slow = usually 1 ft/year or less; Moderate = 1–2 ft/year; Fast = 2-3 ft/year; Very Fast = more than 3 ft/year.
4. Density: For an individual plant species, defined as the amount of space that is occupied by foliage, twigs, and branches, and can be estimated by the amount of light that can be seen through the plant. Low density – 25-35% of space occupied by plant material (with 65-75% open space through which air can travel); Medium density – 40-60% of space occupied by plant material; High density - 60-80% of space occupied by plant material; Very High – more than 80% of space occupied by plant material. The overall density of a windbreak is affected by the species selected, number of rows, and spacing between plants.

TABLE 4.7: Planting Rates for Trees, Shrubs, and Tree & Shrub Mixes for Native Cover Plantings (Wildlife Habitat and Water Quality)					
<p>Step 1: Identify the <u>primary purpose</u> of the planting and its associated establishment goal. The establishment goal is the number of trees and/or shrubs expected to survive two years after planting.</p> <p>Step 2: Determine the <u>planting rate</u> based on the type of planting stock used and the expected survival rate. (For more details, refer to the Note at the end of this table.) Use the information listed below as a guide to determine the number of plants needed per acre.</p>					
Primary Purpose	Establishment Goal (number of trees and/or shrubs per acre after two years)	Type of Planting Stock	Planting Rate ^{1/} (per acre)	Number of Plants Needed (per acre) for Standard Spacing (in feet)	Remarks
Create or Enhance Wildlife Habitat	200 - 300	Bare-root seedlings	308 - 462	363 plants at 10 x 12 436 plants at 10 x 10	Where trees and/or shrubs will be used to provide wildlife cover within or adjacent to herbaceous areas, they should be planted in groups so that the woody cover area is at least 20 feet wide and at least 400 sq. ft. in size.
		Containerized (1 gallon or larger)	211 - 316	302 plants at 12 x 12	
Reduce Soil Erosion and/or Improve Water Quality	300 - 400	Bare-root seedlings	462 - 615	544 plants at 8 x 10	Recommend using Mix 12 from Table 2.2 as a ground cover on highly erodible land and on other land where erosion is a concern.
		Containerized (1 gallon or larger)	316 - 421	363 plants at 10 x 12	

TABLE 4.7 NOTE:

1. The planting rate is determined by dividing the establishment goal by the expected survival rate. For example, if the establishment goal is 300 - 400, and the expected survival rate is 65% (0.65), then the planting rate is 462 - 615. The planting rates in this table are based on estimated survival rates of 65% for bare-root seedlings and 95% for containerized stock. It may be necessary to adjust planting rates if survival is expected to be significantly different than the 65% or 95% rates.

After a planting is established, the long-term density goal for trees is often determined by basal area (i.e., the cross-sectional area of trees measured at 4.5 feet above the ground). Consult with a licensed professional forester to determine the appropriate basal area (typically, in square feet per acre) or stand density (trees per acre) for a specific site.