



2023 Iowa Woodland Suitability Recommendations

In 2023, the Iowa DNR revised the recommendations for tree and shrub species for the 10 soil groups in Iowa. There were several reasons for this revision: there were errors in the previous recommendations; there were new soils identified and mapped; and additional native species need to be considered for widespread use (as they become readily available).

The following tables are designed to serve as a guideline for matching trees and shrubs to specific soil types within Iowa. To use the guide:

1. Locate the soil type in Column 1 of Table 1;
2. Determine the Conservation Suitability Group (CSG) for the soil type; and
3. Go to the appropriate CSG in Table 2 and review the list of trees and shrubs that are best suited to the soils in that group. **Non-native species are marked with (nn). Species especially susceptible to insects and/or diseases are marked with (🐛).**

This manual is intended as a guide only and is not intended to replace the judgment of a forester or of other natural resource professionals in determining a site's capability to grow specific tree and shrub species. Other factors such as slope, aspect and geographic location in the state should also be considered.

Soil Type	CSG
Ackmore	1
Adair	1
Adco	1
Adrian	10
Afton	2
Ainsworth	4
Albaton	2
Allamakee	3
Allendorf	6
Alluvial Land	10
Amana	1
Ambraw	2
Ames	2
Angus	3
Animal Waste	10
Ankeny	3
Annieville	3
Ansgar	2
Anthon	3
Appanoose	2
Aquents	2
Aquolls	2
Arbor	3
Aredale	3
Arenzville	3
Arispe	1

Soil Type	CSG
Armstrong	1
Arthur	3
Ashdale	3
Ashgrove	3
Atkinson	3
Atterberry	1
Aureola	5
Backbone	6
Bassett	3
Bauer	6
Bearpen	1
Beckwith	2
Belinda	2
Belmann	2
Belview	8
Benclare	4
Bentonsport	8
Bertram	6
Bertrand	3
Billett	5
Biscay	2
Bixby	6
Blake	1
Blencoe	1
Blend	1
Blue Earth	10

Soil Type	CSG
Bode	3
Bolan	5
Boone	6
Boots	10
Borrow Pit	10
Brady	1
Bremer	2
Brownnton	2
Bucklick	4
Bucknell	1
Buckney	7
Built Wetland	10
Burcham	3
Burchard	3
Burkhardt	7
Calamine	2
Calco	8W
Calcousta	2
Caleb	3
Camden	3
Caneek	2
Canisteco	2
Canoe	1
Cantril	1
Carlow	2
Carr	5
Castana	8
Cerlin	1
Chaseburg	3
Chelsea	7
Chequest	2
Churchtown	3
Chute	7
Clanton	4
Clarinda	2
Clarion	3
Clearfield	2
Clinton	4
Clyde	2
Coggon	3
Cokato	3
Coland	2

Soil Type	CSG
Collinwood	1
Colo	2
Cooper	1
Copaston	10
Coppock	1
Cordova	2
Corley	2
Cornell	4
Corwith	1
Cosmos	2
Cott	5
Coyne	3
Creal	1
Cresco	3
Creskin	4
Crippin	1
Crofton	8
Curran	1
Cylinder	1
Danbury	3
Darfur	2
Darwin	2
Davis	3
Delft	2
Dells	1
Deloit	3
Dempster	6
Denrock variant	1
Derinda	6
Dickinson	5
Dickman	7
Dinsdale	3
Dinsmore	3
Dockery	1
Dodgeville	6
Dolbee	2
Donatus	6
Donnan	1
Dorchester	8
Douds	3
Dow	8
Downs	3

Soil Type	CSG
DuPage	3
Dubuque	6
Dumps	10
Dunbarton	10
Dundas	2
Dunkerton	1
Edina	2
Egan	3
Eitzen	3
Eleroy	3
Eleva	6
Ella	3
Elon	8W
Elrick	5
Elrin	1
Elvers	2
Elvira	2
Ely	1
Emeline	10
Estherville	7
Everly	3
Exette	3
Exira	3
Fairhaven	5
Farrar	3
Faxon	2
Fayette	3
Festina	3
Fieldon	2
Fill Land	10
Finchford	7
Flagler	5
Floris	3
Floyd	1
Fluvaquents	2
Forney	2
Fostoria	1
Franklin	1
Frankville	6
Fruitfield	7
Gale	6
Galland	1

Soil Type	CSG
Galva	3
Gara	3
Garmore	3
Garwin	2
Gasconade	10
Gilford	2
Gillett Grove	2
Given	1
Gorin	1
Gosport	6
Goss	4
Grable	8
Graceville	3
Granby	2
Grantcenter	1
Gravel Pits	10
Grundy	1
Guckeen	1
Gullied Land	10
Haig	2
Hamburg	8
Hanlon	3
Hanska	2
Harcot	8W
Harps	8W
Harpster	8W
Havana	2
Havelock	8W
Hawick	7
Hayden	3
Hayfield	1
Haynie	8
Hedrick	3
Hesch Variant	6
Histosols	10
Hixton	6
Holly Springs	8W
Hoopeston	1
Hornick	1
Houghton	10
Humeston	2
Huntsville	3

Soil Type	CSG
Ida	8
Inton	3
Ion	3
Jackson	3
Jacwin	1
Jameston	2
Judson	3
Kalona	2
Kamrar	4
Kanaranzi Variant	5
Kandiyohi	1
Kasson	3
Keg	5
Kenmoor	4
Kennebec	3
Kensett	1
Kenyon	3
Keomah	1
Keosaqua	3
Keswick	4
Kilkenny	4
Killduff	3
Kingston	1
Klinger	1
Klingmore	1
Klossner	2
Klum	5
Kniffin	1
Knoke	8W
Knox	3
Kossuth	2
Koszta	1
Lacrescent	5
Ladoga	3
Lamoni	1
Lamont	5
Landes	5
Lanyon	2
Larpenteur	1
Lawler	1
Lawson	1
La Sueur	1

Soil Type	CSG
Lemond	8W
Lerdal	1
Lester	3
Letri	2
Lilah	7
Limecreek	3
Linder	1
Lindley	3
Lineville	1
Liscomb	3
Liston	8
Loamy terrace escarpments	10
Lossing	1
Lourdes	3
Luana	5
Luther	1
Luton	2
Lycurgus	3
Macksburg	1
Madelia	2
Mahaska	1
Malvern	1
Marcus	2
Marlean	5
Marna	2
Marquis	3
Marshall	3
Marshan	2
Martinsburg	3
Massbach	3
Maxfield	2
Maxmore	2
May City	5
Mayberry	4
Mayer	8W
McCreath	1
McPaul	8W
Medary	4
Millington	8
Minden	2
Minnetonka	2
Modale	8W

Soil Type	CSG
Moingona	3
Moneta	8
Monona	3
Montieth	6
Moody	6
Morconick	7
Mottland	8
Moville	1
Mount Carroll	3
Mount Sterling	2
Muck	10
Mula	8
Munterville	6
Muscatine	1
Muskego	10
Mystic	1
Napa	9
Napier	3
Nasset	3
Nevin	1
New Glarus	3
New Vienna	3
Nicollet	1
Niota	2
Nira	3
Nishna	8W
Nodaway	3
Nordness	10
Northboro	3
Norville	3
Oakton	1
Ocheda	1
Ocheyedan	3
Okaw	2
Okoboji	2
Olin	5
Olmitz	3
Omadi	3
Omsrud	3
Onawa	8W
Oran	1
Orion	1

Soil Type	CSG
Orthents	10
Orwood	3
Ossian	2
Ostrander	3
Otley	4
Otter	2
Ottosen	1
Owego	2
Paint Creek	4
Palms	10
Percival	8W
Perks	7
Pershing	1
Pillot	5
Pinicon	1
Pits	10
Pits, Clay	10
Pits, Sand & Gravel	10
Port Byron	3
Primghar	1
Protivin	1
Psammaquents	2
Quarries	10
Quiver	2
Racine	3
Racoon	2
Raddle	3
Radford	1
Ransom	1
Rathbun	1
Rawles	8
Readlyn	1
Reeds Creek	5
Renova	3
Revere	8W
Riceville	1
Richwood	3
Ridgeport	5
Ridgeton	3
Rinda	2
Ripon	6
River Wash	10


Soil Type	CSG
Rock Outcrop	10
Rocksan	8W
Rockton	6
Rodney	8W
Roine	3
Rolfe	2
Rollingstone	4
Roseville	6
Rosfield	3
Rowley	1
Rozetta	3
Rubio	2
Rushmore	2
Rushville	2
Russell	3
Sable	2
Sac	3
Salida	7
Salix variant	3
Sandy Escarpments	10
Sarpy	7
Sattre	5
Saude	5
Sawmill	2
Schapville	6
Schley	1
Scroll	8W
Seaton	3
Sewage lagoon	10
Seymour	1
Shaffton	1
Shandep	2
Sharpsburg	4
Shelby	3
Shellwood	8
Shorewood	1
Shullsburg	1
Sigglekov	1
Smithland	1
Snider	1
Sogn	10
Soloman	2

Soil Type	CSG
Sparta	7
Sperry	2
Spicer	8W
Spillco	1
Spillville	1
Steep Rock Land	10
Steinauer	8
Storden	8
Strahan	3
Strip Mine Spoils	10
Stronghurst	1
Sunburg	5
Taintor	2
Talcot	8W
Tallula	3
Tama	3
Tell	5
Terril	3
Thebes	3
Thorp	2
Ticonic	8
Tieville	8W
Tilfer	8W
Timula	3
Titus	2
Toolesboro	1
Traer	2
Trent	3
Tripoli	2
Truman	3
Turlin	1
Tuskeego	2
Udifluvents	10
Udolpho	2
Udorthents	10
Urban land	10
Uturin	8W
Van Meter	6
Vesser	2
Village	3
Vinje	4
Volney	5

Soil Type	CSG
Vore	8
Wabash	2
Wacousta	2
Wadena	5
Waldorf	2
Walford	2
Wapsie	5
Waste Treatment	10
Watkins	3
Watseka	1
Waubeek	3
Waucoma	3
Waukee	5
Waukegan	5
Webster	2

Soil Type	CSG
Weller	4
Wentworth	3
Whalan	6
Whittier	5
Wilmington	1
Wilsey	8
Winneshiek	6
Winterset	2
Wiota	3
Woodbury	2
Worthen	3
Yellowriver	3
Zenor	5
Zook	2
Zwingle	2

Recommended Species for each Soil Group

() Denotes a species especially susceptible to insects and/or disease



(nn) Denotes non-native to Iowa



CF: Denotes Consult Forester prior to use


CFW: Denotes Consult Forester if planted in Western Iowa or in soils with a pH >7.0

CSG	Description	Hardwoods	Conifers	Shrubs
1 Moderately Wet	<p>These deep soils are somewhat poorly drained with a seasonal high water table of 1-3.5 feet during the growing season (unless artificially drained). They contain less than 5% calcium carbonate. Soils are typically neutral to moderately acid.</p> <p>Suitability of this soil for: <u>Upland Oaks = moderately high</u> <u>Conifers = low</u> <u>Bottomland Hardwoods = high</u></p> <p>SI= 56-65 Production = 150-199 board feet/acre/year</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> Bur Oak Pin Oak (CFW) Shingle Oak (CF) Swamp White Oak (CFW) Black Walnut (CF) Northern Pecan (CF) Hackberry Kentucky Coffee Tree (CF) Locust, Honey, Thornless Shellbark Hickory (CF) Bitternut Hickory (CF) River Birch (CF) Silver Maple Sycamore, American Cottonwood, 	<p><u>Conifers</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> E. Red Cedar (CF) Bald Cypress (nn) Tamarack (nn) European Larch (nn) Norway Spruce (nn) (CF) Northern White Cedar (nn) (CF) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> American Plum Arrowwood Buttonbush Choke Cherry Crabapple, Prairie Dogwood, Gray Dogwood, Roughleaf Dogwood, Silky Dogwood, Redosier Elderberry, American False Indigo Bush Hawthorn, Downy Hazelnut, American Highbush Cranberry, American Nannyberry Ninebark E. Redbud (CF) Sandbar Willow Serviceberry, Downy Sumac, Smooth (CF) Sumac, Fragrant (CF)

CSG	Description	Hardwoods	Conifers	Shrubs
		Eastern <ul style="list-style-type: none"> Hybrid Poplar (nn) (CF) Black Willow Black Cherry (CF) Red Mulberry Ohio Buckeye (CF) 		<ul style="list-style-type: none"> Winterberry (CF), (CFW)
2 Wet	<p>These deep soils are poorly drained with a seasonal high water table within 1 foot of the soil surface during the growing season (unless artificially drained).</p> <p>These soils also appear on the Iowa list of Hydric soils unless they are organic soils, in which case they will be in Group 10. They contain less than 5% calcium carbonates. Soils are typically neutral to moderately acid.</p> <p>Suitability of this soil for: <u>Upland Oaks = low</u> <u>Conifers = low</u> <u>Bottomland Hardwoods = moderately high</u></p> <p>SI= <45 Production = <100 board feet/acre/year</p>	<u>Hardwoods</u> suitable for plantings consist of: <ul style="list-style-type: none"> Bottomland Bur Oak (CF) Pin Oak (CFW) Swamp White Oak (CFW) Hackberry River Birch (CFW) Shellbark Hickory (CF) Silver Maple Sycamore, American Cottonwood, Eastern Black Willow 	<u>Conifers</u> are typically not suitable for these sites. <ul style="list-style-type: none"> Bald Cypress (nn) Tamarack (nn) European Larch (nn) 	<u>Shrubs</u> suitable for plantings consist of: <ul style="list-style-type: none"> Buttonbush Dogwood, Silky Dogwood, Gray (CF) Dogwood, Redosier Elderberry, American False Indigo Bush (CF) Sandbar Willow Winterberry (CF), (CFW)
3 Well Drained Moist Loamy	<p>These deep medium textured soils are moderately well or well drained. These soils typically contain 18-35% clay in the series control section. They are typically neutral or slightly acidic and have high available water capacity.</p> <p>Suitability of this soil for: <u>Upland Oaks = very high</u> <u>Conifers = very high</u> <u>Bottomland Hardwoods = very high</u></p> <p>SI = 76-85 Production = 250-300 board feet/acre/year</p>	<u>Hardwoods</u> suitable for plantings consist of: <ul style="list-style-type: none"> American hornbeam (CF) Black Oak Bur Oak Chinkapin Oak Dwarf Chinkapin Oak (CF) Red Oak Swamp White Oak White Oak Shingle Oak (CF) Black Walnut Northern Pecan (CF) Hackberry Ironwood (CF) Basswood/Am. Linden (CF) Elm (Native Cultivars for Red, White, and Rock 	<u>Conifers</u> suitable for plantings consist of: <ul style="list-style-type: none"> E. Red Cedar E. White Pine Jack Pine (nn) Red Pine (nn) (CF) Ponderosa Pine (nn) (CF) Norway Spruce (nn) White Spruce (nn) White/Concolor Fir (nn) Northern White Cedar (nn)(CF) Serbian Spruce (nn) Cannan Fir (nn) European Larch (limited to middle row of 3 row conifer windbreak) (nn) Douglas Fir (nn) (CF) 	<u>Shrubs</u> suitable for plantings consist of: <ul style="list-style-type: none"> American Plum Arrowwood Buttonbush Choke Cherry Crabapple, Prairie Dogwood, Gray Dogwood, Roughleaf Dogwood, Silky Dogwood, Redosier Elderberry, American False Indigo Bush (CF) Hawthorn, Downy Hazelnut, American Highbush Cranberry, American Nannyberry Ninebark E. Redbud (CF) Serviceberry, Downy Sumac, Smooth (CF) Sumac, Fragrant (CF)

CSG	Description	Hardwoods	Conifers	Shrubs
		elms) (CF) <ul style="list-style-type: none"> • Kentucky Coffee Tree • Locust, Honey (Thornless) • Black Cherry • Shagbark Hickory • Bitternut Hickory (CF) • Hard Maple (Black, Sugar) • Silver Maple • Cottonwood, Eastern • Sycamore, American • Ohio Buckeye (CF) • Hybrid Poplar (nn) (CF) • Butternut  		<ul style="list-style-type: none"> • Viburnum spp. • Paw Paw (CF) • Blackhaw viburnum • Black Chokeberry (Aronia) • Wahoo, Eastern (CF) • Bladdernut (CF) • Shrubby St John's Wort (CF)
4 Well Drained Clayey	<p>These deep fine textured soils are well drained or moderately well drained. They typically contain > 35% clay in the series control section. They are typically neutral or slightly acidic and have high available water capacity.</p> <p>Suitability of this soil for: <u>Upland Oaks = High</u> <u>Conifers = Moderately High</u> <u>Cottonwood type species = High</u></p> <p>SI= 66-75. Production = 200-249 board feet/acre/year</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American hornbeam (CF) • Bur Oak • Pin Oak • Red Oak • Swamp White Oak • White Oak • Chinkapin Oak • Dwarf Chinkapin Oak (CF) • Shingle Oak (CF) • Post Oak (CF) • Blackjack Oak (CF) • Black Walnut • Northern Pecan (CF) • Hackberry • Elm (Native Cultivars for Red, White, and Rock elms) (CF) • Basswood/American Linden  (CF) • Kentucky Coffee Tree • Locust, Honey, Thornless • Ironwood • Black Cherry • Shagbark Hickory • Bitternut Hickory (CF) 	<p><u>Conifers</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • E. Red Cedar • E. White Pine • Jack Pine (nn) • Red Pine (nn) (CF) • Norway Spruce (nn) • White Spruce (nn) (CF) • White/Concolor Fir (nn) • Northern White Cedar (nn) (CF) • Serbian Spruce (nn) • European Larch (limited to middle row of 3 row conifer windbreak) (nn) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Arrowwood • Crabapple, Prairie • Dogwood, Gray • Dogwood, Roughleaf • Dogwood, Silky • Dogwood, Redosier • Elderberry, American • Hawthorn, Downy • Hazelnut, American • Highbush Cranberry American • Nannyberry • Ninebark • E. Redbud (CF) • Serviceberry, Downy • Sumac, Smooth (CF) • Sumac, Fragrant (CF) • Blackhaw viburnum • Black Chokeberry (Aronia) • Shrubby St John's Wort (CF)

CSG	Description	Hardwoods	Conifers	Shrubs
		<ul style="list-style-type: none"> • Hard Maple (Black & Sugar) • Silver Maple • Cottonwood, Eastern • Sycamore, American • Hybrid Poplar (nn)(CF) 		
<p style="text-align: center;">5 Well Drained Dry Loamy</p>	<p>These deep medium textured soils are well or moderately well drained. These soils typically contain 8-18% clay in the series control section. Sand and/or gravel in the subsoil is common. They are typically neutral or slightly acid and have medium or low available water capacity.</p> <p>Suitability of this soil for: <u>Upland Oaks = moderately high</u> <u>Conifers = moderately high</u> <u>Bottomland Hardwoods = moderately high</u></p> <p>SI = 56-65 Production = 150-199 board feet/acre/year</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Black Oak • Bur Oak • Red Oak • Chinkapin Oak • White Oak • Dwarf Chinkapin Oak (CF) • Shingle Oak (CF) • Post Oak (CF) • Blackjack Oak (CF) • Locust, Honey, Thornless • Black Walnut (CF) • Hackberry • Elm (Native Cultivars for Red, White, and Rock elms) (CF) • Black Cherry • Shagbark Hickory • Cottonwood, Eastern • Butternut  (CF) 	<p><u>Conifers</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • E. Red Cedar • E. White Pine • Jack Pine (nn) • Red Pine (nn) (CF) • Ponderosa Pine (nn) (CF) • Norway Spruce (nn) • White Spruce (nn) • Concolor fir (nn) • Serbian Spruce (nn) (CF) • Douglas Fir (nn) (CF) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Arrowwood • Buttonbush • Chokecherry • Crabapple, Prairie • Dogwood, Gray • Dogwood, Roughleaf • Hawthorn, Downy • Hazelnut, American • Highbush Cranberry, American • Nannyberry • Ninebark • Serviceberry, Downy • Sumac, Smooth (CF) • Sumac, Fragrant (CF) • Blackhaw Viburnum • Black Chokeberry (Aronia)
<p style="text-align: center;">6 Moderately Deep</p>	<p>These well and moderately well drained soils are underlain by weathered shale, limestone, or sandstone at depths of 20 inches to 40 inches. They are typically neutral to slightly acidic.</p> <p>Suitability of this soil for: <u>Upland Oaks = high</u> <u>Conifers = high</u> <u>Bottomland Hardwoods = high</u></p> <p>SI = 66-75 Production = 200-249 board feet/acre/year</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Black oak • Bur Oak • Red Oak • Swamp White Oak • White Oak • Chinkapin Oak • Black Walnut (CF) • Hackberry • Basswood/Am. Linden  (CF) • Kentucky Coffee Tree • Black Cherry • Ironwood • Shagbark Hickory • Hard Maple (Black, Sugar) • Silver Maple 	<p><u>Conifers</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • E. Red Cedar • E. White Pine • Jack Pine (nn) • Red Pine (nn) (CF) • Ponderosa Pine (nn) (CF) • Norway Spruce (nn) • White Spruce (nn) • White/Concolor Fir (nn) • Northern White Cedar (nn) (CF) • European Larch (nn) • Douglas Fir (nn) (CF) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Arrowwood • Buttonbush • Crabapple, Prairie • Dogwood, Gray • Dogwood, Silky • Dogwood, Roughleaf • Dogwood, Redosier • Elderberry, American • Hawthorn, Downy • Hazelnut, American • Highbush Cranberry, American • Nannyberry • Ninebark • E. Redbud • Serviceberry, Downy • Sumac, Smooth (CF)

CSG	Description	Hardwoods	Conifers	Shrubs
		<ul style="list-style-type: none"> • Cottonwood, Eastern • Sycamore, American • Hybrid Poplar (nn) (CF) • Butternut  (CF) 		<ul style="list-style-type: none"> • Sumac, Fragrant (CF) • Paw Paw (CF) • Blackhaw viburum
7 Deep Sandy	<p>These well to excessively drained soils are sandy throughout the soil profile. They are typically slightly acid or neutral. Available water capacity is low.</p> <p>Suitability of this soil for: <u>Upland Oaks = moderate</u> <u>Conifers = moderately high</u> <u>Bottomland Hardwoods = moderately high</u></p> <p>S I= 46-56 Production = 100-149 board feet per acre per year</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Chinkapin Oak (CF) • Black Oak • Bur Oak • Red Oak (CF) • White Oak (CF) • Hackberry • Elm (Native Cultivars for Red, White, and Rock elms) (CF) • Shagbark Hickory (CF) • Locust, Honey (Thornless) • Cottonwood, Eastern (CF) • Butternut  (CF) 	<p><u>Conifers</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • E. Red Cedar • E. White Pine • Jack Pine (nn) • Ponderosa Pine (nn) (CF) • Red Pine (nn) (CF) • Concolor fir (nn) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Arrowwood • Chokecherry • Crabapple, Prairie • Dogwood, Gray • Dogwood, Roughleaf • Hawthorn, Downy • Hazelnut, American (CF) • Ninebark • Sumac, Smooth (CF) • Viburnum spp. • Blackhaw Viburnum
8 Calcareous	<p>These deep moderately well to well drained soils have a high concentration of calcium carbonate in the soil profile. They are moderately to strongly alkaline.</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Bur Oak • Red Oak (CF) • Chinkapin Oak • White Oak (CF) • Hackberry • Elm (Native Cultivars for Red, White, and Rock elms) (CF) • Locust, Honey, Thornless • Shagbark Hickory • Cottonwood, Eastern (CF) • Hybrid Poplar (nn) (CF) 	<p>Conifers suitable for plantings consist of:</p> <ul style="list-style-type: none"> • E. Red Cedar • Jack Pine (nn) (CF) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Dogwood, Gray • Dogwood, Roughleaf • Nannyberry (CF) • Ninebark • Blackhaw viburnum • Sumac, Smooth (CF)
8W Wet Calcareous	<p>These deep somewhat poor or poorly drained soils have a high concentration of calcium carbonate in the soil profile. They are moderately to strongly alkaline.</p> <p>Suitability of this soil for: <u>Upland Oaks = low</u> <u>Conifers = low</u> <u>Bottomland Hardwoods =</u></p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Bottomland Bur Oak • Swamp White Oak (CF) • Hackberry • Shellbark Hickory (CF) • Silver Maple 	<p>Conifers suitable for plantings consist of:</p>	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • American Plum • Buttonbush • Elderberry • False Indigo Bush (CF) • Dogwood, Gray • Dogwood, Silky • Nannyberry (CF) • Ninebark

CSG	Description	Hardwoods	Conifers	Shrubs
	<p><u>moderate</u></p> <p>SI= <45. Production = <100 board feet/acre/year</p>	<ul style="list-style-type: none"> • American Sycamore • Cottonwood (Eastern) • Black Willow • Locust, Honey, Thornless 		
<p>9 Saline/Sodic</p>	<p>These deep soils have high concentrations of soluble salts and/or sodium in the soil profile. They are strongly or very strongly alkaline.</p> <p>Suitability of this soil for: <u>Upland Oaks = low</u> <u>Conifers = low</u> <u>Bottomland hardwoods = moderate</u></p> <p>SI = <45 Production = <100 board feet/acre/year</p> <p>https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/430/430-031/SPES-342.pdf</p>	<p><u>Hardwoods</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • White Oak (CF) • Bur Oak (CF) • Pin Oak (CF) • Red Oak (CF) • River Birch • Cottonwood, Eastern • Locust, Honey, Thornless • Kentucky Coffee tree • Black Walnut (CF) • Hackberry (CF) • Black Cherry (CF) 	<p><u>Conifers</u> are not suitable for these sites.</p> <ul style="list-style-type: none"> • Ponderosa Pine (CF) • E. Red Cedar (CF) 	<p><u>Shrubs</u> suitable for plantings consist of:</p> <ul style="list-style-type: none"> • Arrowwood • Buttonbush • Dogwood, Silky • Dogwood, Roughleaf • Elderberry • Sumac, Smooth • Serviceberry, Downy • Hawthorn, Downy (CF) • Shrubby St John's Wort (CF)
<p>10 Shallow Soils and Misc. Areas</p>	<p>These areas are mapped as miscellaneous land types or are very shallow soils. Consultation with a professional forester is advised to determine which tree or shrub species may be suited to these sites. Many existing timber areas are found on the shallow soils (i.e. Nordness) in this group.</p>	<p>Consult with a professional forester for recommendations.</p>	<p>Consult with a professional forester for recommendations.</p>	<p>Consult with a professional forester for recommendations.</p>