

INDIANA FIELD OFFICE TECHNICAL GUIDE

Section II - Soil Groups for Windbreaks

Introduction

Soil groups for windbreaks are grouping of soils with similar characteristics and are called Windbreak Planting Groups (WPG).

This section of the Field Office Technical Guide (FOTG) was developed to help NRCS conservationists select suitable plant materials for farmstead and field windbreaks. However, these plant materials may also be suitable for recreation areas, wildlife plantings, ornamental plantings, and critical area plantings

To Obtain Species Recommendations for a Windbreak

Click on the appropriate WPG below to view a listing of species that are adapted for that soil group. The species listed are classified by the expected plant height at an age of 20 years.

Plant height is needed when designing a windbreak to determine the placement of the windbreak, area protected, and arrangement of species within the windbreak.

Refer to section IV of the NRCS Indiana Field Office Technical Guide for specifications for the planning and establishment of Field and Farmstead Windbreaks.

Soil Groups for Windbreaks

April 10, 2001

The map units are assigned flooding frequency and duration based on flooding which could occur at any time of the year. Conditions will differ from site to site within the same map unit. The species to be planted should be determined after the actual flooding data is determined.

[WPG-1](#)

Soils in this group, if artificially drained, are well suited to all climatically adapted species except those, which may be affected by excess moisture. Windbreak sites are adequately drained for corn and soybean production. These soils are somewhat poorly drained with a water table at .5-2.0 feet in the winter and spring. The permeability ranges

from slow to rapid in the upper 20 inches. They lack free carbonates or the pH is < 7.4 within a depth of 20 inches.

Example- fincastle, crosby, sleeth, iva, sleeth, whitaker,

WPG-1F

Soils in this group, if artificially drained, are well suited to all climatically adapted species except those, which may be affected by excess moisture. Windbreak sites are adequately drained for corn and soybean production. These soils are somewhat poorly drained soils with a water table at .5-2.0 feet in the winter and spring and are subject to frequent to occasional flooding for very brief to brief duration during the growing season. The permeability ranges from slow to rapid in the upper 20 inches. They lack free carbonates or the pH is < 7.4 within a depth of 20 inches.

Example- wakeland, shoals

WPG-2

Soils in this group are well suited to all climatically adapted species except those, which may be affected by excess moisture. Sites are adequately drained for corn and soybean production.

Soils are clayey, loamy, silty or sandy, are poorly drained or very poorly drained with very slow to rapid permeability. They are on uplands, floodplains and terraces. Somewhat poorly drained soils on floodplains are also included and are subject to frequent or occasional flooding for brief to long duration. Also included are somewhat poorly drained soils on uplands and terraces, which have very slow permeability within the upper 20 inches. Runoff is slow. Most poorly drained or very poorly drained soils are ponded for brief or very brief duration during the growing season. Some of these soils have limiting layers below a depth of 40 inches. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. Millsdale is included even though bedrock is present at depths between 20 and 40 inches.

Example -brookston, maumee, pewamo, ragsdale, rennselaer, west/and, millsdale

WPG-2F

Soils in this group are well suited to all climatically adapted species except those, which may be affected by excess moisture. Sites are adequately drained for corn and soybean production.

Soils are clayey, loamy, or sandy; are poorly drained or very poorly drained with very slow to rapid permeability. They are on floodplains and terraces. They are subject to frequent or occasional flooding for brief to long duration. Runoff is slow. Some sites are ponded for brief or very brief duration. Some of these soils have limiting layers below a

depth of 40 inches. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example- sloan, saranac, prochaska

WPG-2KF

Soils in this group are well suited to all climatically adapted species except those, which may be affected by excess moisture and also those that are affected by soils with a pH above 7.4. Sites are adequately drained for corn and soybean production.

Soils are clayey, loamy, or sandy, are poorly drained or very poorly drained with very slow to rapid permeability. They are on floodplains and terraces. They are subject to frequent or occasional flooding for brief to long duration. Runoff is slow. Some sites are ponded for brief or very brief duration. Some of these soils have limiting layers below a depth of 40 inches. These soils have carbonates or the pH is >7.4 within 20 inches of the surface.

Example - sawabash

WPG-2O

Soils in this group are well suited to all climatically adapted species except those affected by very high organic matter. Sites are adequately drained for corn and soybean production. These organic soils are very poorly drained and have very high organic matter in the upper 20 inches. They are ponded for very brief to long duration in the late winter and spring. A few areas are frequently or occasionally flooded for very brief or brief duration. They lack free carbonates at or near the surface.

Example-houghton, palms

WPG-3

Soils in this group are well suited to all climatically adapted species. These soils are moderately well drained or well drained. They are loamy, silty or clayey and have high available water capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. They do not have limiting layers within a depth of 40 inches.

Example-russel/, parke, xenia, ockley, a/ford, waupecan

WPG-3E

Soils in this group are well suited to all climatically adapted species. These soils are moderately well drained or well drained and are severely eroded. The surface layer is more clayey, less friable and has less organic matter than those soils in-group 3. They are loamy or clayey and have high available water capacity. These soils lack carbonates or

the pH is <7.4 within 20 inches of the surface. They do not have limiting layers within a depth of 40 inches.

Example-severely eroded russell, park, xenia, ockley, waupecan

WPG-3F

Soils in this group are suited to all climatically adapted species except those affected by short term flooding. These soils are well drained or moderately well drained and are on floodplains. They are loamy, or clayey. They are frequently or occasionally flooded for brief or very brief duration during the growing season. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. They do not have limiting layers within a depth of 20 inches. Note! Some areas of these soils on floodplains along the Ohio or lower Wabash River may be subject to long duration flooding. If on-site evaluation verifies long term flooding, use species from WPG 2F.

Example- haymond, genesee, cuba

WPG-3K

Soils in this group are well suited to all climatically adapted species, which grow well in soils with carbonates or pH above 7.4 within a depth of 20 inches and also those that can not tolerate flooding. Soils are clayey or loamy, are well or moderately well drained and are on uplands and terraces. The permeability ranges from moderately slow to rapid. They have a pH >7.4 or free carbonates within 20 inches.

Example-hennepin, rodman, strawn, losantville

WPG-3 KE

Soils in this group are well suited to all climatically adapted species which grow well in soils with carbonates or pH above 7.4 within a depth of 20 inches. Soils are clayey or loamy, are well or moderately well drained and are on uplands and terraces. These soils are severely eroded. The surface layer is more clayey, less friable and has less organic matter than those soils in group 3K. The permeability ranges from moderately slow to rapid. They have a pH greater than 7.4 or free carbonates within 20 inches.

Example-Casco, Strawn, Losantville

WPG-3KF

Soils in this group are well suited to all climatically adapted species which grow well in soils with carbonates or pH above 7.4 within a depth of 20 inches and which can tolerate short term flooding. Soils are clayey or loamy, are well and moderately well drained and are on floodplains. Soils are subject to frequent or occasional flooding for very brief or

brief duration. The permeability ranges from moderate to rapid. They have a pH >7.4 or free carbonates within 20 inches.

Example-stonelick, gessie

WPG-4L1

Soils in this group are suited to climatically adapted species except those that have a high moisture requirement and also require a deep rooting medium. These well drained and moderately well drained soils have layers that restricts root development to varying degrees within a depth of 40 inches. These layers include fragipans and dense till. These soils are moderately slowly to very slowly permeable in the most restrictive layer. The available water capacity is moderate. The water table for these soils ranges from 1.5 to greater than 6 feet. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example-rossmoyne, zanesville, morley, ebal, bonnell

WPG-4 LE

Soils in this group are suited to climatically adapted species except those that have a high moisture requirement and also require a deep rooting medium. These soils are severely eroded. The surface layer is more clayey, less friable and has less organic matter than those soils in group 4 LI. These well drained and moderately well drained soils have layers that restricts root development to varying degrees within a depth of 20 inches. These layers include fragipans and dense till. These soils are moderately slowly to very slowly permeable in the most restrictive layer. The available water capacity is moderate. The water table for these soils ranges from 1.5 to greater than 6 feet. These soils dominantly lack carbonates or the pH is <7.4 within 20 inches of the surface. Some of the most severely eroded areas have carbonates at the surface. Sites with carbonates at the surface need to be reviewed by a forester.

Example- severely eroded zanesville, morley

WPG-4 L2

Soils in this group are suited to most climatically adapted species except those that have a high moisture requirement and also require a deep rooting medium. Sites are adequately drained for corn and soybean production These somewhat poorly drained soils have layers that restricts root development to varying degrees within a depth of 40 inches. Layers include moderately fine or fine textured subsoil, fragipans or bedrock. These layers are moderately slowly to very slowly permeable. The available water capacity is moderate. The water table for these soils is within a depth of .5 to 1.5 feet. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example -Blount, avonburg,randolph

WPG-5

Soils in this group are suited to all climatically adapted species except those that have high moisture requirements. These soils are on floodplains, uplands and terraces and are well drained or moderately well drained. These soils do not have a limiting layer above a depth of 40 inches and have moderate available water holding capacity. Soils on floodplains are subject to rare flooding or are subject to frequent or occasional flooding for very brief duration. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example-alvin, billett, elston, hagerstown

WPG-5E

Soils in this group are suited to all climatically adapted species except those that have high moisture requirements. The soils are moderately well drained or well drained. These soils are severely eroded. The surface layer is more clayey, less friable and has less organic matter than those soils in group 5. They are loamy or clayey and have high available water capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. They do not have limiting layers within a depth of 40 inches. A few of these units may have carbonates or pH>7.4 within 20 inches of the surface.

Example-severely eroded hagerstown, markland

WPG-6 GR

Soils in this group are suited to most climatically adapted species except those that have high moisture requirements. They are well drained, moderately well drained or somewhat excessively drained. These soils are underlain with sand, gravel or both or bedrock within a depth of 20 to 40 inches and are typically droughty. They have low to moderate available water holding capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example-fox, gilpin

WPG-6 EGR

Soils in this group are suited to most climatically adapted species except those that have high moisture requirements. They are well drained, moderately well drained or somewhat excessively drained. These soils are severely eroded. The surface layer is more clayey, less friable and has less organic matter than those soils in group 6 (g) or 6 (e). They are loamy or clayey and have moderate available water capacity. These soils are underlain with sand, gravel or both or bedrock within a depth of 20 to 40 inches and are typically droughty. They have low to moderate available water holding capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface.

Example-severely eroded fox, gilpin

WPG-7

Soils in this group are suited to most of the climatically adapted species except those that have high moisture requirements. These soils are on uplands, terraces and rarely flooded floodplains. These soils are dominantly sandy to a depth of 60 inches and have low available moisture capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. These soils are somewhat poorly drained to excessively drained

Example -brems, oakville, bloom field

WPG-7F

Soils in this group are suited to most of the climatically adapted species except those that have high moisture requirements. These soils are on floodplains and are subject to frequent or occasional flooding for very brief or brief duration. These soils are dominantly sandy to a depth of 60 inches and have low available moisture capacity. These soils lack carbonates or the pH is <7.4 within 20 inches of the surface. These soils are somewhat poorly drained to excessively drained. Ouiatenon soils are included in this group although they contain carbonates at the surface.

Example- algansee, abscota

WPG-10

Windbreaks are not usually recommended for these soils or miscellaneous land types. One or more characteristics such as depth to rock or long duration ponding severely limit planting, survival, or growth of trees and shrubs. Onsite investigation may indicate that tree and shrub plantings can be made with special treatment. Species to plant will depend on the conditions at each site.

Example- weikert, undrained muck and mineral soils, ponded units, strip mined ground, gravel pits

Windbreak and Environmental Planting Species
by
Windbreak Planting Group (wpg)
for Indiana

April 10, 2001

wpgI

<8': Red-Osier Dogwood (*Comus stolonifera*), Silky Dogwood (*Comus amomum*), Common Winterberry (*Ilex verticillata*), Highbush Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*), Common Juniper (*Juniperus communis*)

8-15': Arrowwood (*Viburnum dentatum*), Hazel Alder (*Ainus serrulata*), Rough Leaf Dogwood (*Cornus drummondii*), Nannyberry (*Viburnum lentago*), Pawpaw (*Asimina triloba*), Blackhaw (*Viburnum prunifolium*), Witch Hazel (*Hamamelis virginiana*), Cockspur Hawthorn (*Crataegus crus-galli*), Prairie Crab (*Malus ioensis*)

16-25': Washington Hawthorn (*Crataegus phaenopyrnm*), Eastern Red cedar (*Juniperus virginiana*), Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricintt*), Shingle Oak (*Quercus imbricaria*), Hackberry (*Celtis occidentalis*), Common Persimmon (*Diospyros virginiana*), Pecan² (*Carya illinoensis*)

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Black Gum (*Nyssa sylvatica*), Sweetgum (*Liquidambar styraciflua*), Swamp White Oak (*Quercus bicolor*), Swamp Chestnut Oak (*Quercus michauxii*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Cherrybark Oak (*Quercusfalcata var. pagodifolia*), Tuliptree (*Liriodendron ~ulipifera*), Green Ash (*Fraxinus pennsylvanica*), Pin Oak (*Quercus palustris*), Red Maple (*Acer rubrum*) [Return to top of page.](#)

wpg1F

<8' : Red-Osier Dogwood (*Cornus stolonifera*) , Silky Dogwood (*Comus amomum*), Common Winterberry (*Ilex verticillata*), Highbush Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), Highbush Blueberry (*Vaccinium corymbosum*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*)

8-15': Hazel Alder (*Ainus serrulata*), Rough LeafDogwood (*Cornus drummondii*), Nannyberry (*Viburnum lentago*), Pawpaw (*Asimina triloba*), Cockspur Hawthorn (*Crataegus trus-galli*)

16-25': Washington Hawthorn (*Crataegus phaeopyrum*), Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*), Hackberry (*Celtis occidentalis*), Shingle Oak (*Quercus imbricaria*), Common Persimmon (*Diospyros virginiana*), Pecan² (*Carya illinoensis*)

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Black Gum (*Nyssa sylvatica*), Sweetgum (*Liquidambar styraciflua*), Swamp White Oak (*Quercus bicolor*), Swamp Chestnut Oak (*Quercus michauxii*), Overcup Oak (*Quercus lyrata*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Cherrybark Oak (*Quercus falcata* var. *pagodifolia*), Green Ash (*Fraxinus pennsylvanica*), Red Maple (*Acer rubrum*), Pin Oak (*Quercus palustris*)

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wpg2

<8': Red-Osier Dogwood (*Cornus stolonifera*), Gray Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), Highbush Blueberry (*Vaccinium corymbosum*), Highbush Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*), Spicebush (*Lindera benzoin*), Common Winterberry (*Ilex verticillata*), Buttonbush (*Cephalanthus occidentalis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazel Alder (*Ainus serrulata*), Cockspur Hawthorn (*Crataegus crus-galli*), Nannyberry (*Viburnum lentago*)

16-25'; Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*), Hackberry (*Celtis occidentalis*), Shingle Oak (*Quercus imbricaria*), Pecan² (*Carya illinoensis*), Overcup Oak (*Quercus lyrata*), Green Hawthorn (*Crataegus viridis*)

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Black Gum (*Nyssa sylvatica*), Sweetgum (*Liquidambar styraciflua*), Swamp White Oak (*Quercus bicolor*), River Birch (*Betula nigra*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Pin Oak (*Quercus palustris*), Red Maple (*Acer rubrum*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg2F

<8': Red-Osier Dogwood (*Cornus stolonifera*), Gray Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), Highbush Blueberry (*Vaccinium corymbosum*), Highbush Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*), Spicebush (*Lindera benzoin*), Common Winterberry (*Ilex verticillata*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazel Alder (*Alnus serrulata*),
Cockspur Hawthorn (*Crataegus crus-galli*)

16-25': Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*), Shingle
Oak (*Quercus imbricaria*), Hackberry (*Celtis occidentalis*)

26-35': Baldcypress² (*Taxodium distichum*), Black Gum (*Nyssa sylvatica*), Sweetgum
(*Liquidambar styraciflua*), Swamp White Oak (*Quercus bicolor*), River Birch (*Betula
nigra*),

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X
canadensis*), Red Maple (*Acer rubrum*), Pin Oak (*Quercus palustris*), Green Ash
(*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg2KF

<8': Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Gray
Dogwood (*Cornus racemosa*), American Elder (*Sambucus canadensis*)

8-15'; Rough Leaf Dogwood (*Cornus drummondii*), Pawpaw (*Asimina triloba*)

16-25': Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*),
Washington Hawthorn (*Crataegus phaenopyrum*), Hackberry (*Celtis occidentalis*)

26-35': American Sycamore (*Platanus occidentalis*), Bur Oak (*Quercus macrocarpa*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X
canadensis*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg2O

<8': Red-Osier Dogwood (*Cornus stolonifera*), Gray Dogwood (*Cornus racemosa*), Silky
Dogwood (*Cornus amomum*), Highbush Blueberry (*Vaccinium corymbosum*), Highbush
Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), American
Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*), Spicebush (*Lindera
benzoin*), Common Winterberry (*Ilex verticillata*), Buttonbush (*Cephalanthus
occidentalis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazel Alder (*Alnus serrulata*),
Nannyberry (*Viburnum lentago*), Alternateleaf Dogwood (*Cornus alternifolia*)

16-25': Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*), Common
Persimmon (*Diospyros virginiana*)

26-35': Baldcypress² (*Taxodium distichum*), Sweetgum (*Liquidambar styraciflua*), Pin Oak (*Quercus palustris*), Swamp White Oak (*Quercus bicolor*), River Birch (*Betula nigra*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Red Maple (*Acer rubrum*) [Return to top of page.](#)

wpg3

<8': Coralberry (*Symphoricarpos orbiculatus*), Gray Dogwood (*Cornus racemosa*), Highbush Cranberry (*Viburnum trilobum*), Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Common Winterberry (*Ilex verticillata*), Black Chokeberry (*Aronia melanocarpa*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*), Common Juniper (*Juniperus communis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Corylus americana*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Witch Hazel (*Hamamelis virginiana*), Wild Sweet Crab (*Malus coronaria*), Nannyberry (*Viburnum lentago*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Northern White-cedar (*Thuja occidentalis*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*), Common Persimmon (*Diospyros virginiana*), Pecan² (*Carya illinoensis*), Prairie Crab (*Malus ioensis*)

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Yellow Poplar (*Liriodendron tulipifera*), Green Ash (*Fraxinus pennsylvanica*), Northern Red Oak (*Quercus rubra*), Black Gum (*Nyssa sylvatica*), Pin Oak (*Quercus palustris*), Black Cherry (*Prunus serotina*), Black Walnut (*Juglans nigra*), White Oak (*Quercus alba*), Red Pine (*Pinus resinosa*)

>35': Eastern White Pine (*Pinus strobus*), Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Cherrybark O~ (*Quercus falcata* var. *pagodifolia*)

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wpg3E

<8': Coralberry (*Symphoricarpos orbiculatus*), Gray Dogwood (*Cornus racemosa*), Highbush Cranberry (*Viburnum trilobum*), Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Common Winterberry (*Ilex verticillata*), Black

Chokeberry (*Aronia melanocalpa*), Spicebush (*Lindera benzoin*), Ninebark (*Physocalpus opulifolius*), Common Juniper (*Juniperus communis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Corylus americana*), Prairie Crab (*Malus ioensis*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Wild Sweet Crab (*Malus coronaria*), Nannyberry (*Viburnum lentago*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Northern White-cedar (*Illyria occidentalis*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*)

26-35': Norway Spruce (*Picea abies*), Black Oak (*Quercus velutina*), Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Pin Oak (*Quercus palustris*), Virginia Pine² (*Pinus virginiana*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Eastern White Pine (*Pinus strobus*) [Return to top of page.](#)

wpg3F

<8' : Highbush Cranberry (*Viburnum trilobum*), Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Common Winterberry (*Ilex verticillata*), Black Chokeberry (*Aronia melanocalpa*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*), Ninebark (*Physocalpus opulifolius*),

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazel Alder (*Ainus serruiata*)

16-25': Tamarack (*Larix laricina*), Northern White-cedar (*Illyria occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Cockspur Hawthorn (*Crataegus crus-galli*), Shingle Oak (*Quercus imbricaria*), Hackberry (*Celtis occidentalis*)

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Pin Oak (*Quercus palustris*), Swamp White Oak (*Quercus bicolor*), Bur Oak (*Quercus macrocarpa*), River Birch (*Betula nigra*), Sweet Gum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*)

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wpg3K

<8': Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Gray Dogwood (*Cornus racemosa*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Blackhaw (*Viburnum prunifolium*), Pawpaw (*Asimina triloba*), Nannyberry (*Viburnum lentago*), Common Chokecherry (*Prunus virginiana*), Hazelnut (*Corylus americana*)

16-25' Northern White-Cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Eastern Red cedar (*Juniperus virginiana*), Hackberry (*Celtis occidentalis*)

26-35': American Sycamore (*Platanus occidentalis*), Bur Oak (*Quercus macrocarpa*), Chinkapin Oak (*Quercus muhlenbergii*), White Spruce (*Picea glauca*), Black Walnut (*Juglans nigra*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg3KE

<8': Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Gray Dogwood (*Cornus racemosa*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Blackhaw (*Viburnum prunifolium*), Nannyberry (*Viburnum lentago*), Common Chokecherry (*Prunus virginiana*), Hazelnut (*Corylus americana*)

16-25' Northern White-Cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Cockspur Hawthorn (*Crataegus crus-galli*), Eastern Redcedar (*Juniperus virginiana*), Hackberry (*Celtis occidentalis*)

26-35': American Sycamore (*Platanus occidentalis*), Bur Oak (*Quercus macrocarpa*), Chinkapin Oak (*Quercus muhlenbergii*), White Spruce (*Picea glauca*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg3KF

<8': Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Gray Dogwood (*Cornus racemosa*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Nannyberry (*Viburnum lentago*)

16-25' Northern White-Cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Hackberry (*Celtis occidentalis*)

26-35': American Sycamore (*Platanus occidentalis*), Bur Oak (*Quercus macrocarpa*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg4L

<8': Coralberry (*Symphoricarpos orbiculatus*), Gray Dogwood (*Cornus racemosa*), Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Cornus amomum*), Common Juniper (*Juniperus communis*), Black Chokeberry (*Aronia melanocarpa*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Corylus americana*), Prairie Crab (*Malus ioensis*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Nannyberry (*Viburnum lentago*), Witch-hazel (*Hamamelis virginiana*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Northern White-cedar (*Thuja occidentalis*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*),

26-35'; Norway Spruce (*Picea abies*), Black Oak (*Quercus velutina*), Black Gum (*Nyssa sylvatica*), Virginia Pine; (*Pinus virginiana*), Bur Oak (*Quercus macrocarpa*), Chinkapin Oak (*Quercus michauxii*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Eastern White Pine (*Pinus strobus*), Green Ash (*Fraxinus pennsylvanica*) [Return to top of page.](#)

wpg4L2

<8': Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Common Winterberry (*Ilex verticillata*), Highbush Cranberry (*Viburnum trilobum*), Black Chokeberry (*Aronia melanocarpa*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*), Ninebark (*Physocarpus opulifolius*),

8-15': Arrowwood (*Viburnum dentatum*), Hazel Alder (*Ainus serrulata*), Rough Leaf Dogwood (*Cornus drummondii*), Nannyberry (*Viburnum lentago*), Pawpaw (*Asimina triloba*), Blackhaw (*Viburnum prunifolium*), Witch Hazel (*Hamamelis virginiana*), Cockspur Hawthorn (*Crataegus crus-galli*)

16-25': Washington Hawthorn (*Crataegus phaenopyrum*), Eastern Red cedar (*Juniperus virginiana*), Northern White-Cedar (*Thuja occidentalis*), Tamarack¹ (*Larix laricina*), Shingle Oak (*Quercus imbricaria*),

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Pin Oak (*Quercus palustris*), Green Ash (*Fraxinus pennsylvanica*), Red Maple (*Acer rubrum*), Swamp White Oak (*Quercus bicolor*), Swamp Chestnut Oak² (*Quercus michauxii*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*)

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wpg4LE

<8': Coralberry (*Symphoricarpos orbiculatus*), Gray Dogwood (*Comus racemosa*), Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Comus amomum*), Common Juniper (*Juniperus communis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Cory/us americana*), Prairie Crab (*Ma/us ioensis*), Black Haw (*Viburnum prunifo/ium*), Staghom Sumac (*Rhus typhina*), Smooth Sumac (*Rhus g/abra*), Arrowwood (*Viburnum dentatum*), Nannyberry (*Viburnum /entago*), Shinging Sumac (*Rhus copa//ina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Chinkapin Oak (*Quercus muhlbergii*), Northern White-cedar (*Thuja occidentalis*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*),

26-35': Norway Spruce (*Picea abies*), Black Oak (*Quercus velutina*), Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Virginia Pine² (*Pinus virginiana*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*)

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wpg5

<8': Highbush Cranbeny (*Viburnum triiobum*), Red-Osier Dogwood (*Cornus stoionifera*), Silky Dogwood (*Cornus amomum*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*),

8-15': Rough LeafDogwood (*Cornus drummondii*), Hazel Alder (*Ainus serruiata*)

16-25': Northern White-cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Hackberry (*Celtis occidentalis*),

26-35': Norway Spruce (*Picea abies*), Baldcypress² (*Taxodium distichum*), Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Pin Oak (*Quercus palustris*), Swamp White Oak (*Quercus bicolor*), Bur Oak (*Quercus macrocarpa*), River Birch (*Betula nigra*), Sweet Gum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*)

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wpg5E

<8': Coralberry (*Symphoricarpos orbiculatus*), Gray Dogwood (*Cornus racemosa*), Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Cornus amomum*), Black Chokeberry (*Aronia melanocarpa*), Common Juniper (*Juniperus communis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Corylus americana*), Prairie Crab (*Ma/us ioensis*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Wild Sweet Crab (*Ma/us coronaria*), Nannyberry (*Viburnum lentago*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Northern White-cedar (*Thuja occidentalis*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*)

26-35': Norway Spruce (*Picea abies*), Black Oak (*Quercus velutina*), Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Pin Oak (*Quercus palustris*), Virginia Pine ([Pinus virginiana](#))

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*) [Return to top of page.](#)

wpg6GR

<8': Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Cornus amomum*), Black Chokeberry (*Aronia melanocarpa*), American Elder (*Sambucus canadensis*), Common Juniper (*Juniperus communis*), Coralberry (*Symphoricarpos orbiculatus*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazelnut (*Corylus americana*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Shining Sumac (*Rhus copallina*)

16-25': Northern White-cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Eastern Red cedar (*Juniperus virginiana*), Hackberry (*Celtis occidentalis*),

26-35': Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Bur Oak (*Quercus macrocarpa*), River Birch (*Betula nigra*), Red Maple (*Acer rubrum*), Virginia Pine ([Pinus virginiana](#)), Baldcypress ([Taxodium distichum](#))

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*) [Return to top of page.](#)

wpg6EGR

<8': Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Cornus amomum*), American Elder (*Sambucus canadensis*)

8-15': Rough LeafDogwood (*Comus drummondii*), Prairie Crab (*Malus ioensis*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*)

26-35': Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Bur Oak (*Quercus macrocarpa*), River Birch (*Betula nigra*), Red Maple (*Acer rubrum*), Virginia Pine² (*Pinus virginiana*), Black Oak (*Quercus velutina*),

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Eastern White Pine (*Pinus strobus*) [Return to top of page.](#)

wpg7

<8': Highbush Cranberry (*Viburnum trilobum*), Silky Dogwood (*Cornus amomum*), American Elder (*Sambucus canadensis*)

8-15': Rough LeafDogwood (*Cornus drummondii*), Prairie Crab (*Malus ioensis*), Black Haw (*Viburnum prunifolium*), Staghorn Sumac (*Rhus typhina*), Smooth Sumac (*Rhus glabra*), Arrowwood (*Viburnum dentatum*), Shining Sumac (*Rhus copallina*)

16-25': Eastern Red cedar (*Juniperus virginiana*), Serviceberry (*Amelanchier arborea*), Washington Hawthorn (*Crataegus phaenopyrum*), American Plum (*Prunus americana*), Hackberry (*Celtis occidentalis*)

26-35': Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Bur Oak (*Quercus macrocalpa*), River Birch (*Betula nigra*), Red Maple (*Acer rubrum*), Virginia Pine² (*Pinus virginiana*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Eastern White Pine (*Pinus strobus*) [Return to top of page.](#)

wpg7F

<8': Highbush Cranberry (*Viburnum trilobum*), Red-Osier Dogwood (*Cornus stolonifera*), Silky Dogwood (*Cornus amomum*), Common Winterberry (*Ilex verticillata*), Black Chokeberry (*Aronia melanocarpa*), Spicebush (*Lindera benzoin*), American Elder (*Sambucus canadensis*)

8-15': Rough Leaf Dogwood (*Cornus drummondii*), Hazel Alder (*Ainus serrulata*)

16-25': Northern White-cedar (*Thuja occidentalis*), Washington Hawthorn (*Crataegus phaenopyrum*), Hackberry (*Celtis occidentalis*),

26-35': Green Ash (*Fraxinus pennsylvanica*), Black Gum (*Nyssa sylvatica*), Bur Oak (*Quercus macrocalpa*), River Birch (*Betula nigra*), Red Maple (*Acer rubrum*)

>35': Eastern Cottonwood (*Populus deltoides*), Imperial Carolina Poplar (*Populus X canadensis*), Eastern White Pine (*Pinus strobus*) [Return to top of page.](#)

wpg10

On site investigation is needed. [Return to top of page.](#)

[1](#) Northern Indiana (see attached [map](#))

[2](#) Counties south of US 40 (see attached [map](#))
