

One x One Degree
Climate Change Atlas Tree Species

USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

Current and Potential Future Habitat, Capability, and Migration

| Common Name | Scientific Name | Range | MR | %Cell | FIAsum | FIAiv | ChngCl45 | ChngCl85 | Adap | Abund | Capabil45 | Capabil85 | SHIFT45 | SHIFT85 | SSO | N |
|------------------------------|------------------------------|-------|--------|-------|--------|-------|-----------|-----------|--------|----------|-----------|-----------|-----------|-----------|-----|----|
| loblolly pine | Pinus taeda | WDH | High | 92.3 | 4538.7 | 41.7 | Sm. dec. | Sm. dec. | Medium | Abundant | Fair | Fair | | | 0 | 1 |
| water oak | Quercus nigra | WDH | High | 85.2 | 873.8 | 8.4 | Sm. inc. | Sm. inc. | Medium | Abundant | Very Good | Very Good | | | 1 | 2 |
| sweetgum | Liquidambar styraciflua | WDH | High | 69.4 | 799.2 | 9.8 | No change | No change | Medium | Abundant | Good | Good | | | 1 | 3 |
| post oak | Quercus stellata | WDH | High | 60 | 628.9 | 8.8 | Sm. inc. | Sm. inc. | High | Abundant | Very Good | Very Good | | | 1 | 4 |
| winged elm | Ulmus alata | WDL | Medium | 71.3 | 454.0 | 5.5 | No change | No change | Medium | Common | Fair | Fair | | | 1 | 5 |
| southern red oak | Quercus falcata | WDL | Medium | 66.1 | 306.2 | 4.2 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | 1 | 6 |
| sugarberry | Celtis laevigata | NDH | Medium | 33.8 | 241.2 | 4.4 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | 1 | 7 |
| shortleaf pine | Pinus echinata | WDH | High | 37 | 237.0 | 5.7 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | 1 | 8 |
| pecan | Carya illinoensis | NSH | Low | 9.7 | 162.4 | 12.7 | No change | No change | Low | Common | Poor | Poor | Infill + | Infill + | 0 | 9 |
| white oak | Quercus alba | WDH | Medium | 27.2 | 132.0 | 4.2 | No change | No change | High | Common | Good | Good | Infill ++ | Infill ++ | 1 | 10 |
| cherrybark oak; swamp red o. | Quercus pagoda | NSL | Medium | 26.9 | 112.6 | 3.3 | No change | Sm. inc. | Medium | Common | Fair | Good | | | 1 | 11 |
| blackgum | Nyssa sylvatica | WDL | Medium | 39.1 | 98.6 | 2.3 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | 1 | 12 |
| willow oak | Quercus phellos | NSL | Low | 18.6 | 88.5 | 3.8 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | 1 | 13 |
| American hornbeam; muscle | Carpinus caroliniana | WSL | Low | 22.9 | 80.8 | 3.0 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | 1 | 14 |
| American elm | Ulmus americana | WDH | Medium | 31.8 | 80.0 | 2.3 | Lg. inc. | Lg. inc. | Medium | Common | Very Good | Very Good | | | 1 | 15 |
| white ash | Fraxinus americana | WDL | Medium | 24.7 | 58.4 | 2.3 | No change | No change | Low | Common | Poor | Poor | | | 0 | 16 |
| cedar elm | Ulmus crassifolia | NDH | Medium | 6.1 | 57.1 | 5.1 | Sm. inc. | Lg. inc. | Low | Common | Fair | Good | Infill + | Infill ++ | 1 | 17 |
| green ash | Fraxinus pennsylvanica | WSH | Low | 23 | 56.1 | 2.0 | Lg. inc. | Lg. inc. | Medium | Common | Very Good | Very Good | | | 1 | 18 |
| American holly | Ilex opaca | NSL | Medium | 25.9 | 54.1 | 1.9 | No change | No change | Medium | Common | Fair | Fair | | | 1 | 19 |
| eastern hophornbeam; ironw | Ostrya virginiana | WSL | Low | 25.4 | 51.6 | 1.8 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | 1 | 20 |
| red maple | Acer rubrum | WDH | High | 19.9 | 42.0 | 1.6 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | Infill ++ | Infill ++ | 1 | 21 |
| laurel oak | Quercus laurifolia | NDH | Medium | 11.7 | 40.6 | 2.5 | Sm. inc. | Sm. inc. | Medium | Rare | Fair | Fair | Infill + | Infill + | 1 | 22 |
| eastern redcedar | Juniperus virginiana | WDH | Medium | 14.7 | 36.3 | 2.1 | Lg. inc. | Lg. inc. | Medium | Rare | Good | Good | | | 1 | 23 |
| black willow | Salix nigra | NSH | Low | 5.8 | 28.7 | 7.8 | No change | No change | Low | Rare | Very Poor | Very Poor | | | 2 | 24 |
| Osage-orange | Maclura pomifera | NDH | Medium | 9.7 | 28.2 | 2.3 | No change | No change | High | Rare | Fair | Fair | Infill + | Infill + | 1 | 25 |
| cittamwood/gum bumelia | Sideroxylon lanuginosum ssp. | NSL | Low | 6.7 | 25.5 | 2.9 | No change | Sm. inc. | High | Rare | Fair | Good | Infill + | Infill ++ | 1 | 26 |
| southern magnolia | Magnolia grandiflora | NSL | Low | 8 | 24.7 | 2.3 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 1 | 27 |
| sycamore | Platanus occidentalis | NSL | Low | 4.5 | 22.6 | 4.3 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | Infill + | 2 | 28 |
| black hickory | Carya texana | NDL | High | 17.9 | 22.4 | 1.3 | Sm. inc. | Lg. inc. | Medium | Rare | Fair | Good | Infill + | Infill ++ | 1 | 29 |
| mockernut hickory | Carya alba | WDL | Medium | 13.6 | 20.2 | 1.6 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | | | 1 | 30 |
| honeylocust | Gleditsia triacanthos | NSH | Low | 5.3 | 19.3 | 2.1 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | Infill + | Infill + | 1 | 31 |
| slippery elm | Ulmus rubra | WSL | Low | 10.2 | 18.5 | 1.9 | Lg. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 32 |
| redbay | Persea borbonia | NSL | Low | 10.5 | 18.2 | 2.4 | Sm. inc. | No change | High | Rare | Good | Fair | Infill ++ | Infill + | 1 | 33 |
| sassafras | Sassafras albidum | WSL | Low | 12.3 | 17.7 | 1.0 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | | 1 | 34 |
| nuttall oak | Quercus texana | NSH | Medium | 2 | 17.6 | 1.7 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | 0 | 35 |
| river birch | Betula nigra | NSL | Low | 2 | 16.8 | 5.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 2 | 36 |
| blackjack oak | Quercus marilandica | NSL | Medium | 4.7 | 16.6 | 3.5 | Sm. inc. | Sm. inc. | High | Rare | Good | Good | Infill ++ | Infill ++ | 1 | 37 |
| black cherry | Prunus serotina | WDL | Medium | 15.5 | 16.3 | 0.9 | No change | No change | Low | Rare | Very Poor | Very Poor | | | 0 | 38 |
| slash pine | Pinus elliotii | NDH | High | 5.8 | 14.7 | 1.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 2 | 39 |
| water hickory | Carya aquatica | NSL | Medium | 2.9 | 14.4 | 1.4 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 2 | 40 |
| overcup oak | Quercus lyrata | NSL | Medium | 1 | 14.0 | 4.0 | Sm. dec. | Sm. dec. | Low | Rare | Very Poor | Very Poor | | | 0 | 41 |
| sweetbay | Magnolia virginiana | NSL | Medium | 1.9 | 13.9 | 7.4 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 2 | 42 |
| boxelder | Acer negundo | WSH | Low | 5.8 | 12.9 | 2.3 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | 0 | 43 |
| pignut hickory | Carya glabra | WDL | Medium | 2 | 10.5 | 3.2 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 2 | 44 |
| common persimmon | Diospyros virginiana | NSL | Low | 9.2 | 10.5 | 0.8 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | 1 | 45 |
| American beech | Fagus grandifolia | WDH | High | 0.5 | 8.5 | 4.8 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 2 | 46 |
| red mulberry | Morus rubra | NSL | Low | 6.7 | 8.2 | 1.1 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | Infill + | 1 | 47 |



One x One Degree
Climate Change Atlas Tree Species

USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

Current and Potential Future Habitat, Capability, and Migration

| Common Name | Scientific Name | Range | MR | %Cell | FIAsum | FIAiv | ChngCl45 | ChngCl85 | Adap | Abund | Capabil45 | Capabil85 | SHIFT45 | SHIFT85 | SSO | N |
|--------------------|-----------------------|-------|--------|-------|--------|-------|-------------|---------------|--------|---------|-------------|-------------|-----------|-----------|-----|----|
| swamp chestnut oak | Quercus michauxii | NSL | Low | 4.3 | 8.0 | 1.3 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 2 | 48 |
| flowering dogwood | Cornus florida | WDL | Medium | 9 | 7.6 | 0.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 1 | 49 |
| American basswood | Tilia americana | WSL | Medium | 4.7 | 6.6 | 1.4 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 50 |
| longleaf pine | Pinus palustris | NSH | Medium | 2.8 | 6.0 | 2.1 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | | 2 | 51 |
| water elm | Planera aquatica | NSL | Low | 1.9 | 5.8 | 3.1 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 52 |
| bitternut hickory | Carya cordiformis | WSL | Low | 3.8 | 4.4 | 1.2 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | 0 | 53 |
| black walnut | Juglans nigra | WDH | Low | 2.9 | 4.1 | 0.9 | Lg. dec. | Very Lg. dec. | Medium | Rare | Very Poor | Lost | | | 0 | 54 |
| eastern redbud | Cercis canadensis | NSL | Low | 4.7 | 3.1 | 0.7 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 55 |
| bald cypress | Taxodium distichum | NSH | Medium | 0.9 | 2.4 | 2.5 | No change | No change | Medium | Rare | Poor | Poor | Infill + | | 2 | 56 |
| Shumard oak | Quercus shumardii | NSL | Low | 1.9 | 2.3 | 1.2 | Sm. dec. | Lg. dec. | High | Rare | Poor | Poor | | | 0 | 57 |
| bluejack oak | Quercus incana | NSL | Low | 0.9 | 2.3 | 2.4 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 58 |
| eastern cottonwood | Populus deltoides | NSH | Low | 1.3 | 2.1 | 3.0 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 59 |
| black oak | Quercus velutina | WDH | High | 0.9 | 1.4 | 1.5 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 60 |
| shagbark hickory | Carya ovata | WSL | Medium | 4.9 | 1.1 | 0.8 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 61 |
| white mulberry | Morus alba | NSL | FIA | 0.2 | 0.7 | 0.2 | Unknown | Unknown | NA | Rare | NNIS | NNIS | | | 0 | 62 |
| pawpaw | Asimina triloba | NSL | Low | 0.9 | 0.5 | 0.5 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 63 |
| live oak | Quercus virginiana | NDH | High | 1.9 | 0.3 | 0.7 | Lg. inc. | Lg. inc. | Medium | Rare | Good | Good | | | 2 | 64 |
| florida maple | Acer barbatum | NSL | Low | 0.9 | 0.2 | 0.2 | Lg. dec. | No change | High | Rare | Poor | Fair | | | 0 | 65 |
| water tupelo | Nyssa aquatica | NSH | Medium | 0.1 | 0.1 | 0.0 | Lg. dec. | Lg. dec. | Low | Rare | Very Poor | Very Poor | | | 0 | 66 |
| serviceberry | Amelanchier spp. | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 67 |
| shellbark hickory | Carya laciniosa | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 68 |
| black ash | Fraxinus nigra | WSH | Medium | 0 | 0 | 0 | Unknown | Unknown | Low | Absent | Unknown | Unknown | | | 0 | 69 |
| cucumbertree | Magnolia acuminata | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 70 |
| bigleaf magnolia | Magnolia macrophylla | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 71 |
| swamp tupelo | Nyssa biflora | NDH | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Low | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 72 |
| sourwood | Oxydendrum arboreum | NDL | High | 0 | 0 | 0 | Unknown | Unknown | High | Modeled | Unknown | Unknown | | | 0 | 73 |
| pin cherry | Prunus pensylvanica | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 74 |
| chinkapin oak | Quercus muehlenbergii | NSL | Medium | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 75 |
| northern red oak | Quercus rubra | WDH | Medium | 0 | 0 | 0 | Unknown | Unknown | High | Absent | Unknown | Unknown | | | 0 | 76 |
| black locust | Robinia pseudoacacia | NDH | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 77 |