

Current and Potential Future Habitat, Capability, and Migration

| | | | |
|----------------|--------|---------|-----------|
| | sq. km | sq. mi | FIA Plots |
| Area of Region | 10,402 | 4,016.1 | 254 |

Species Information

The columns below provide brief summaries of the species associated with the region and described in the table on the next pages. Definitions are provided in the Excel file for this region.

| Genus | Species | Abundance | | Model | | Potential Change in Habitat Suitability | | Capability to Cope or Persist | | Migration Potential | | | | | |
|---------|-----------|-----------|-----------|-------------|--------------|---|----------------|-------------------------------|----------------|---------------------|-------------|-----------|---------|----|----|
| | | | | Reliability | Adaptability | Scenario RCP45 | Scenario RCP85 | Scenario RCP45 | Scenario RCP85 | SHIFT RCP45 | SHIFT RCP85 | | | | |
| Ash | 2 | | | High | 12 | 20 | Increase | 23 | 23 | Very Good | 6 | 6 | Likely | 2 | 2 |
| Hickory | 7 | | | Medium | 31 | 46 | No Change | 18 | 22 | Good | 13 | 14 | Infill | 22 | 23 |
| Maple | 3 | Abundant | 3 | Low | 32 | 9 | Decrease | 22 | 18 | Fair | 11 | 10 | Migrate | 0 | 0 |
| Oak | 14 | Common | 14 | FIA | 1 | | New | 2 | 2 | Poor | 18 | 21 | | | |
| Pine | 4 | Rare | 47 | | | | Unknown | 11 | 11 | Very Poor | 15 | 11 | | | |
| Other | 34 | Absent | 10 | | | | | | | FIA Only | 0 | 0 | | | |
| | 64 | | 74 | | 76 | 75 | | 76 | 76 | Unknown | 10 | 10 | | | |
| | | | | | | | | | | | 73 | 72 | | | |

Potential Changes in Climate Variables

Temperature (°F)

| | Scenario | 2009 | 2039 | 2069 | 2099 | |
|--------------------------|----------|------|------|------|------|--|
| Annual Average | CCSM45 | 60.4 | 61.7 | 62.7 | 63.0 | |
| | CCSM85 | 60.4 | 62.0 | 63.8 | 65.5 | |
| | GFDL45 | 60.4 | 62.7 | 63.6 | 64.6 | |
| | GFDL85 | 60.4 | 62.4 | 64.8 | 67.3 | |
| | HAD45 | 60.4 | 62.1 | 64.1 | 64.8 | |
| | HAD85 | 60.4 | 62.3 | 65.0 | 67.5 | |
| Growing Season (May—Sep) | CCSM45 | 70.0 | 71.1 | 71.7 | 72.1 | |
| | CCSM85 | 70.0 | 71.4 | 73.1 | 75.0 | |
| | GFDL45 | 70.0 | 72.6 | 73.4 | 75.2 | |
| | GFDL85 | 70.0 | 72.4 | 74.9 | 78.1 | |
| | HAD45 | 70.0 | 71.8 | 73.5 | 74.0 | |
| | HAD85 | 70.0 | 72.0 | 74.9 | 77.1 | |
| Coldest Month (Average) | CCSM45 | 45.7 | 47.7 | 48.3 | 48.3 | |
| | CCSM85 | 45.7 | 47.7 | 48.6 | 49.6 | |
| | GFDL45 | 45.7 | 48.4 | 48.5 | 48.5 | |
| | GFDL85 | 45.7 | 46.5 | 47.5 | 47.8 | |
| | HAD45 | 45.7 | 46.2 | 47.5 | 48.1 | |
| | HAD85 | 45.7 | 47.7 | 48.8 | 50.2 | |
| Warmest Month (Average) | CCSM45 | 72.9 | 73.8 | 74.1 | 74.3 | |
| | CCSM85 | 72.9 | 74.3 | 74.8 | 75.8 | |
| | GFDL45 | 72.9 | 75.9 | 76.1 | 77.2 | |
| | GFDL85 | 72.9 | 75.9 | 77.1 | 79.1 | |
| | HAD45 | 72.9 | 75.0 | 75.7 | 75.9 | |
| | HAD85 | 72.9 | 75.3 | 76.8 | 77.5 | |

Precipitation (in)

| | Scenario | 2009 | 2039 | 2069 | 2099 | |
|--------------------------|----------|------|------|------|------|--|
| Annual Total | CCSM45 | 38.8 | 38.9 | 44.0 | 41.7 | |
| | CCSM85 | 38.8 | 39.8 | 42.4 | 42.0 | |
| | GFDL45 | 38.8 | 39.7 | 46.3 | 38.4 | |
| | GFDL85 | 38.8 | 38.8 | 40.6 | 39.4 | |
| | HAD45 | 38.8 | 39.8 | 37.5 | 40.5 | |
| | HAD85 | 38.8 | 41.3 | 36.0 | 38.1 | |
| Growing Season (May—Sep) | CCSM45 | 16.8 | 17.8 | 19.6 | 17.8 | |
| | CCSM85 | 16.8 | 17.1 | 17.7 | 16.2 | |
| | GFDL45 | 16.8 | 18.1 | 23.2 | 17.6 | |
| | GFDL85 | 16.8 | 18.0 | 19.1 | 19.2 | |
| | HAD45 | 16.8 | 16.5 | 15.9 | 17.5 | |
| | HAD85 | 16.8 | 17.2 | 15.0 | 15.2 | |

NOTE: For the six climate variables, four 30-year periods are used to indicate six potential future trajectories. The period ending in 2009 is based on modeled observations from the PRISM Climate Group and the three future periods were obtained from the NASA NEX-DCP30 dataset. Future climate projections from three models under two emission scenarios show estimates of each climate variable within the region. The three models are CCSM4, GFDL CM3, and HadGEM2-ES and the emission scenarios are the 4.5 and 8.5 RCP. The average value for the region is reported, even though locations within the region may vary substantially based on latitude, elevation, land-use, or other factors.

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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 | 91.1 | 3533.3 | 39.0 | Sm. dec. | Sm. dec. | Medium | Abundant | Fair | Fair | | | | 0 1 |
| water oak | Quercus nigra | WDH | High | 88.8 | 759.4 | 9.3 | Sm. inc. | Sm. inc. | Medium | Abundant | Very Good | Very Good | | | | 1 2 |
| sweetgum | Liquidambar styraciflua | WDH | High | 64.4 | 672.5 | 9.8 | No change | No change | Medium | Abundant | Good | Good | | | | 1 3 |
| post oak | Quercus stellata | WDH | High | 40.7 | 367.3 | 7.4 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | | 1 4 |
| winged elm | Ulmus alata | WDL | Medium | 45.9 | 265.6 | 4.6 | No change | No change | Medium | Common | Fair | Fair | | | | 1 5 |
| southern red oak | Quercus falcata | WDL | Medium | 59.5 | 236.3 | 4.7 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | | 1 6 |
| sugarberry | Celtis laevigata | NDH | Medium | 42.4 | 173.9 | 5.9 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | | 1 7 |
| shortleaf pine | Pinus echinata | WDH | High | 24.8 | 163.2 | 5.8 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | | 1 8 |
| white oak | Quercus alba | WDH | Medium | 23.9 | 110.1 | 3.7 | Sm. dec. | Sm. dec. | High | Common | Fair | Fair | Infill + | Infill + | | 1 9 |
| blackgum | Nyssa sylvatica | WDL | Medium | 37.8 | 86.3 | 2.2 | Sm. inc. | Sm. inc. | High | Common | Very Good | Very Good | | | | 1 10 |
| cherrybark oak; swamp red o. | Quercus pagoda | NSL | Medium | 22.5 | 72.2 | 3.1 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | | 1 11 |
| willow oak | Quercus phellos | NSL | Low | 24.2 | 71.6 | 3.4 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | | 1 12 |
| pecan | Carya illinoensis | NSH | Low | 6.6 | 70.4 | 8.5 | No change | No change | Low | Common | Poor | Poor | Infill + | Infill + | | 0 13 |
| American elm | Ulmus americana | WDH | Medium | 46.1 | 68.6 | 2.5 | Lg. inc. | Lg. inc. | Medium | Common | Very Good | Very Good | | | | 1 14 |
| green ash | Fraxinus pennsylvanica | WSH | Low | 32.3 | 60.3 | 2.5 | Lg. inc. | Lg. inc. | Medium | Common | Very Good | Very Good | | | | 1 15 |
| American hornbeam; muscle | Carpinus caroliniana | WSL | Low | 19.3 | 58.1 | 2.9 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | | 1 16 |
| white ash | Fraxinus americana | WDL | Medium | 22.3 | 53.2 | 2.1 | No change | No change | Low | Common | Poor | Poor | | | | 0 17 |
| American holly | Ilex opaca | NSL | Medium | 27.9 | 49.9 | 2.0 | No change | No change | Medium | Rare | Poor | Poor | | | | 1 18 |
| laurel oak | Quercus laurifolia | NDH | Medium | 12.6 | 44.6 | 3.2 | Sm. inc. | No change | Medium | Rare | Fair | Poor | Infill + | Infill + | | 1 19 |
| red maple | Acer rubrum | WDH | High | 19.6 | 43.2 | 1.6 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | Infill ++ | Infill ++ | | 1 20 |
| eastern hophornbeam; ironw | Ostrya virginiana | WSL | Low | 19.7 | 35.6 | 1.4 | Sm. inc. | Sm. inc. | High | Rare | Good | Good | | | | 1 21 |
| eastern redcedar | Juniperus virginiana | WDH | Medium | 13.8 | 30.2 | 1.5 | Lg. inc. | Lg. inc. | Medium | Rare | Good | Good | Infill ++ | Infill ++ | | 1 22 |
| mockernut hickory | Carya alba | WDL | Medium | 11.5 | 22.0 | 2.0 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | Infill ++ | Infill ++ | | 1 23 |
| black willow | Salix nigra | NSH | Low | 13.2 | 21.2 | 6.3 | Lg. inc. | Lg. inc. | Low | Rare | Fair | Fair | Infill + | Infill + | | 2 24 |
| sycamore | Platanus occidentalis | NSL | Low | 3.9 | 20.9 | 5.4 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 25 |
| slippery elm | Ulmus rubra | WSL | Low | 16.6 | 20.4 | 2.2 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | | | 1 26 |
| Nuttall oak | Quercus texana | NSH | Medium | 2.7 | 18.9 | 3.6 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | | 0 27 |
| Osage-orange | Maclura pomifera | NDH | Medium | 7.7 | 18.7 | 2.5 | No change | No change | High | Rare | Fair | Fair | Infill + | Infill + | | 1 28 |
| redbay | Persea borbonia | NSL | Low | 10.8 | 18.6 | 2.5 | Sm. inc. | No change | High | Rare | Good | Fair | Infill ++ | Infill + | | 1 29 |
| river birch | Betula nigra | NSL | Low | 2.6 | 17.2 | 5.9 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 30 |
| sassafras | Sassafras albidum | WSL | Low | 10.4 | 16.9 | 0.9 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | | Infill + | 1 31 |
| black hickory | Carya texana | NDL | High | 14.9 | 16.8 | 1.0 | Sm. inc. | Lg. inc. | Medium | Rare | Fair | Good | Infill + | Infill ++ | | 1 32 |
| black cherry | Prunus serotina | WDL | Medium | 18.1 | 16.6 | 1.0 | Sm. dec. | No change | Low | Rare | Very Poor | Very Poor | | | | 0 33 |
| cittamwood/gum bumelia | Sideroxylon lanuginosum ssp. | NSL | Low | 8.8 | 16.4 | 2.6 | No change | Sm. inc. | High | Rare | Fair | Good | Infill + | Infill ++ | | 1 34 |
| sweetbay | Magnolia virginiana | NSL | Medium | 4.4 | 14.9 | 5.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 35 |
| honeylocust | Gleditsia triacanthos | NSH | Low | 3.1 | 14.3 | 2.3 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | | 0 36 |
| blackjack oak | Quercus marilandica | NSL | Medium | 1.9 | 13.7 | 7.1 | Sm. inc. | Sm. inc. | High | Rare | Good | Good | | | | 2 37 |
| swamp chestnut oak | Quercus michauxii | NSL | Low | 5.1 | 13.2 | 2.2 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 38 |
| southern magnolia | Magnolia grandiflora | NSL | Low | 6.8 | 13.1 | 1.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 1 39 |
| cedar elm | Ulmus crassifolia | NDH | Medium | 4.8 | 12.1 | 1.4 | Lg. inc. | Lg. inc. | Low | Rare | Fair | Fair | Infill + | Infill + | | 2 40 |
| pignut hickory | Carya glabra | WDL | Medium | 2.6 | 10.8 | 3.6 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | | 2 41 |
| slash pine | Pinus elliotii | NDH | High | 4.3 | 10.1 | 1.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 42 |
| water elm | Planera aquatica | NSL | Low | 2 | 8.9 | 2.2 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | | 2 43 |
| overcup oak | Quercus lyrata | NSL | Medium | 0.8 | 7.8 | 2.7 | No change | No change | Low | Rare | Very Poor | Very Poor | | | | 2 44 |
| common persimmon | Diospyros virginiana | NSL | Low | 7.5 | 6.6 | 0.7 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | | 1 45 |
| water hickory | Carya aquatica | NSL | Medium | 1.7 | 6.1 | 1.4 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | | 2 46 |
| red mulberry | Morus rubra | NSL | Low | 5.8 | 6.0 | 1.0 | Sm. dec. | No change | Medium | Rare | Very Poor | Poor | | | Infill + | 1 47 |

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 |
|--------------------|-----------------------|-------|--------|-------|--------|-------|-------------|---------------|--------|---------|-------------|-------------|----------|----------|-----|----|
| flowering dogwood | Cornus florida | WDL | Medium | 5.5 | 5.7 | 0.6 | No change | No change | Medium | Rare | Poor | Poor | Infill + | Infill + | 1 | 48 |
| boxelder | Acer negundo | WSH | Low | 7.1 | 4.3 | 0.9 | No change | No change | High | Rare | Fair | Fair | | | 0 | 49 |
| black walnut | Juglans nigra | WDH | Low | 3.6 | 4.2 | 1.0 | Lg. dec. | Very Lg. dec. | Medium | Rare | Very Poor | Lost | | | 0 | 50 |
| bitternut hickory | Carya cordiformis | WSL | Low | 2.9 | 4.1 | 1.4 | Sm. dec. | Sm. dec. | High | Rare | Poor | Poor | | | 0 | 51 |
| eastern redbud | Cercis canadensis | NSL | Low | 4.8 | 3.2 | 0.7 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 52 |
| bald cypress | Taxodium distichum | NSH | Medium | 1 | 3.1 | 1.3 | Sm. inc. | Sm. inc. | Medium | Rare | Fair | Fair | Infill + | Infill + | 2 | 53 |
| American basswood | Tilia americana | WSL | Medium | 2.5 | 2.4 | 0.7 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 54 |
| Shumard oak | Quercus shumardii | NSL | Low | 1.9 | 2.3 | 1.2 | Sm. dec. | Lg. dec. | High | Rare | Poor | Poor | | | 0 | 55 |
| eastern cottonwood | Populus deltoides | NSH | Low | 0.7 | 2.1 | 1.5 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 56 |
| black oak | Quercus velutina | WDH | High | 1 | 1.5 | 1.5 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 57 |
| shagbark hickory | Carya ovata | WSL | Medium | 5.8 | 1.1 | 1.0 | Sm. dec. | Sm. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 58 |
| longleaf pine | Pinus palustris | NSH | Medium | 1 | 1.0 | 1.1 | No change | Sm. inc. | Medium | Rare | Poor | Fair | Infill + | | 2 | 59 |
| white mulberry | Morus alba | NSL | FIA | 0.5 | 0.7 | 0.4 | Unknown | Unknown | NA | Rare | NNIS | NNIS | | | 0 | 60 |
| pawpaw | Asimina triloba | NSL | Low | 1 | 0.5 | 0.5 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 61 |
| live oak | Quercus virginiana | NDH | High | 3.9 | 0.4 | 1.4 | Lg. inc. | Lg. inc. | Medium | Rare | Good | Good | | | 2 | 62 |
| florida maple | Acer barbatum | NSL | Low | 0.5 | 0.2 | 0.1 | Lg. dec. | Lg. dec. | High | Rare | Poor | Poor | | | 0 | 63 |
| water tupelo | Nyssa aquatica | NSH | Medium | 0.3 | 0.1 | 0.0 | Lg. dec. | Lg. dec. | Low | Rare | Very Poor | Very Poor | | | 0 | 64 |
| serviceberry | Amelanchier spp. | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 65 |
| shellbark hickory | Carya laciniosa | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 66 |
| American beech | Fagus grandifolia | WDH | High | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Likely + | Likely + | 3 | 67 |
| black ash | Fraxinus nigra | WSH | Medium | 0 | 0 | 0 | Unknown | Unknown | Low | Absent | Unknown | Unknown | | | 0 | 68 |
| cucumbertree | Magnolia acuminata | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Modeled | Unknown | Unknown | | | 0 | 69 |
| bigleaf magnolia | Magnolia macrophylla | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 70 |
| swamp tupelo | Nyssa biflora | NDH | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Low | Absent | New Habitat | New Habitat | Likely + | Likely + | 3 | 71 |
| sourwood | Oxydendrum arboreum | NDL | High | 0 | 0 | 0 | Unknown | Unknown | High | Modeled | Unknown | Unknown | | | 0 | 72 |
| pin cherry | Prunus pensylvanica | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 73 |
| chinkapin oak | Quercus muehlenbergii | NSL | Medium | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 74 |
| northern red oak | Quercus rubra | WDH | Medium | 0 | 0 | 0 | Unknown | Unknown | High | Absent | Unknown | Unknown | | | 0 | 75 |
| black locust | Robinia pseudoacacia | NDH | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 76 |