S32 E83

### One x One Degree

### Climate Change Atlas Tree Species

### Current and Potential Future Habitat, Capability, and Migration

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

sq. km sq. mi FIA Plots Area of Region 10,421 4,023.6 312

### **Species Information**

The columns below provide breif 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  |           |         |        |             |                 | Potenti     | Potential Change in Habitat Suitability |           |           | Capability to Cope or Persist |          |         |       | Migration Potential |  |  |
|--|----------|-----------|---------|--------|-------------|-----------------|-------------|---|-----------|-----------|-------------------------------|----------|---------|-------|---------------------|--|--|
| Ash                                    | 2        |           |         | Ν      | Vodel       |                 |             | Scenario                                | Scenario  |           | Scenario                      | Scenario |         | SHIFT | SHIFT               |  |  |
| Hickory                                | 7        | Ab        | undance | R      | Reliability | Adaptability    |             | RCP45                                   | RCP85     |           | RCP45                         | RCP85    |         | RCP45 | RCP85               |  |  |
| Maple                                  | 4        | Abundant  | 4       | High   | 17          | 23              | Increase    | 29                                      | 31        | Very Good | 14                            | 14       | Likely  | 0     | 0                   |  |  |
| Oak                                    | 18       | Common    | 24      | Medium | 32          | 48              | No Change   | 9                                       | 9         | Good      | 12                            | 14       | Infill  | 8     | 11                  |  |  |
| Pine                                   | 7        | Rare      | 46      | Low    | 32          | 12              | Decrease    | 31                                      | 29        | Fair      | 8                             | 8        | Migrate | 0     | 1                   |  |  |
| Other                                  | 36       | Absent    | 12      | FIA    | 5           |                 | New         | 7                                       | 8         | Poor      | 19                            | 17       | -       | 8     | 12                  |  |  |
|  | 74       |           | 86      | _      | 86          | 83              | Unknown     | 10                                      | 9         | Very Poor | 15                            | 15       |         |       |                     |  |  |
|  |          |           |         |        |             |                 | -           | 86                                      | 86        | FIA Only  | 3                             | 3        |         |       |                     |  |  |
|  |          |           |         |        |             |                 |             |   |           | Unknown   | 5                             | 4        |         |       |                     |  |  |
| Potential Changes in Climate Variables |          |           |         |        |             |                 |             |   |           | 76        | 75                            |          |         |       |                     |  |  |
| Temperatu                              | re (°F)  |           |         |        |             | Precipitation ( | (in)        |   |           |           |                               |          |         |       |                     |  |  |
|  | Scenario | 2009 2039 | 2069    | 2099   |             | Sce             | enario 2009 | 2039                                    | 2069 2099 |           |                               |          |         |       |                     |  |  |

|         | Scenario | 2009 | 2039 | 2069 | 2099     |
|---------|----------|------|------|------|----------|
| Annual  | CCSM45   | 64.6 | 66.3 | 68.3 | 68.3     |
| Average | CCSM85   | 64.6 | 66.5 | 68.9 | 71.6     |
|         | GFDL45   | 64.6 | 67.5 | 69.4 | 70.1     |
|         | GFDL85   | 64.6 | 67.3 | 70.5 | 74.1     |
|         | HAD45    | 64.6 | 66.9 | 69.5 | 71.1     |
|         | HAD85    | 64.6 | 67.1 | 71.0 | 74.9     |
|         |          |      |      |      |          |
| Growing | CCSM45   | 77.6 | 79.0 | 80.7 | 81.1     |
| Season  | CCSM85   | 77.6 | 79.1 | 81.6 | 84.9     |
| May—Sep | GFDL45   | 77.6 | 80.6 | 82.4 | 83.5     |
|         | GFDL85   | 77.6 | 80.5 | 83.8 | 87.9 🛶 🔶 |
|         | HAD45    | 77.6 | 80.8 | 83.1 | 85.0     |
|         | HAD85    | 77.6 | 80.6 | 86.3 | 90.0     |
|         |          |      |      |      |          |
| Coldest | CCSM45   | 45.3 | 47.6 | 48.4 | 48.2     |
| Month   | CCSM85   | 45.3 | 47.4 | 48.5 | 49.7     |
| Average | GFDL45   | 45.3 | 48.3 | 48.5 | 49.0 🛹 🕂 |
|         | GFDL85   | 45.3 | 47.3 | 48.3 | 48.8     |
|         | HAD45    | 45.3 | 45.5 | 47.0 | 47.8     |
|         | HAD85    | 45.3 | 46.4 | 47.4 | 49.1     |
|         |          |      |      |      |          |
| Warmest | CCSM45   | 81.8 | 83.3 | 84.1 | 84.5 🛶 🔶 |
| Month   | CCSM85   | 81.8 | 83.4 | 84.7 | 86.7 🛶 🔶 |
| Average | GFDL45   | 81.8 | 84.6 | 85.3 | 86.0     |
|         | GFDL85   | 81.8 | 84.8 | 86.2 | 88.6     |
|         | HAD45    | 81.8 | 85.7 | 87.2 | 88.0     |
|         | HAD85    | 81.8 | 85.8 | 89.3 | 91.1     |
|         |          |      |      |      |          |

| Precipitati | on (in)  |      |      |      |            |
|-------------|----------|------|------|------|------------|
|             | Scenario | 2009 | 2039 | 2069 | 2099       |
| Annual      | CCSM45   | 45.7 | 48.4 | 50.3 | 52.2       |
| Total       | CCSM85   | 45.7 | 48.3 | 52.2 | 57.0 ++++  |
|             | GFDL45   | 45.7 | 50.2 | 52.7 | 56.1       |
|             | GFDL85   | 45.7 | 50.1 | 54.2 | 52.6       |
|             | HAD45    | 45.7 | 43.3 | 46.6 | 47.9 🛶 🔶   |
|             | HAD85    | 45.7 | 47.5 | 43.8 | 46.6 🛶 🛶   |
|             |          |      |      |      |            |
| Growing     | CCSM45   | 19.3 | 22.0 | 23.0 | 24.4       |
| Season      | CCSM85   | 19.3 | 20.9 | 23.4 | 25.1 ++++  |
| May—Sep     | GFDL45   | 19.3 | 23.7 | 25.4 | 26.2       |
|             | GFDL85   | 19.3 | 23.2 | 26.6 | 26.3       |
|             | HAD45    | 19.3 | 18.9 | 19.4 | 19.2 🔶 🔶 🔶 |
|             | HAD85    | 19.3 | 20.0 | 16.6 | 17.0 +++++ |
|             |          |      |      |      |            |

**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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## Climate Change Atlas Tree Species Current and Potential Future Habitat, Capability, and Migration

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|-----------------------------|-------------------------|-------|--------|------------|--------------|----------------|-------------|----------|----------|-----------|-----------|-----------|-----------|---------------|
| Common Name                 | Scientific Name         | Range |        |            |              | FIAiv ChngCl45 | ChngCl85    | Adap     | Abund    | Capabil45 | Capabil85 | SHIFT45   | SHIFT85   | SSO N         |
| loblolly pine               | Pinus taeda             | WDH   | High   | 88.3       |              | 32.0 No change | No change   | Medium   |          | Good      | Good      |           |           | 1 1           |
| sweetgum                    | Liquidambar styraciflua | WDH   | High   | 87.7       | 1037.4       | 9.5 No change  | No change   | Medium   | Abundant | Good      | Good      |           |           | 1 2           |
| water oak                   | Quercus nigra           | WDH   | High   | 87.1       | 1032.2       | 9.2 Sm. inc.   | Sm. inc.    | Medium   | Abundant | Very Good | Very Good |           |           | 1 3           |
| slash pine                  | Pinus elliottii         | NDH   | High   | 37         | 999.1        | 19.9 Sm. inc.  | Sm. inc.    | Medium   | Abundant | Very Good | Very Good |           |           | 1 4           |
| red maple                   | Acer rubrum             | WDH   | High   | 61.3       | 449.9        | 5.5 Sm. inc.   | Sm. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 5           |
| laurel oak                  | Quercus laurifolia      | NDH   | Medium | 43         | 354.0        | 5.9 Sm. inc.   | Sm. inc.    | Medium   | Common   | Good      | Good      |           |           | 1 6           |
| swamp tupelo                | Nyssa biflora           | NDH   | Medium | 37.7       | 310.7        | 5.8 Sm. inc.   | Sm. inc.    | Low      | Common   | Fair      | Fair      |           |           | 1 7           |
| longleaf pine               | Pinus palustris         | NSH   | Medium | 19.5       | 244.9        | 10.3 Lg. inc.  | Lg. inc.    | Medium   | Common   | Very Good | Very Good |           |           | 1 8           |
| southern red oak            | Quercus falcata         | WDL   | Medium | 42.4       | 177.9        | 3.9 Lg. inc.   | Lg. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 9           |
| yellow-poplar               | Liriodendron tulipifera | WDH   | High   | 27.4       | 166.6        | 4.5 Sm. dec.   | Lg. dec.    | High     | Common   | Fair      | Fair      |           |           | 1 10          |
| black willow                | Salix nigra             | NSH   | Low    | 14.9       | 143.8        | 8.1 No change  | Sm. inc.    | Low      | Common   | Poor      | Fair      |           |           | 1 11          |
| mockernut hickory           | Carya alba              | WDL   | Medium | 32.4       | 130.8        | 4.2 Sm. inc.   | Sm. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 12          |
| winged elm                  | Ulmus alata             | WDL   | Medium | 37.7       | 127.1        | 2.6 Lg. inc.   | Lg. inc.    | Medium   | Common   | Very Good | Very Good |           |           | 1 13          |
| white oak                   | Quercus alba            | WDH   | Medium | 30.1       | 119.2        | 3.6 Sm. inc.   | Sm. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 14          |
| black cherry                | Prunus serotina         | WDL   | Medium | 57.3       | 113.7        | 1.7 Lg. inc.   | Lg. inc.    | Low      | Common   | Good      | Good      |           |           | 1 15          |
| green ash                   | Fraxinus pennsylvanica  | WSH   | Low    | 30.2       | 109.8        | 2.4 Sm. inc.   | Sm. inc.    | Medium   | Common   | Good      | Good      |           |           | 1 16          |
| American elm                | Ulmus americana         | WDH   | Medium | 30.2       | 100.2        | 2.3 Lg. inc.   | Lg. inc.    | Medium   | Common   | Very Good | Very Good |           |           | 1 17          |
| bald cypress                | Taxodium distichum      | NSH   | Medium | 7.2        | 85.6         | 8.0 Sm. dec.   | Sm. dec.    | Medium   | Common   | Poor      | Poor      |           | Infill +  | 0 18          |
| willow oak                  | Quercus phellos         | NSL   | Low    | 17.5       | 84.4         | 3.2 Sm. inc.   | Sm. inc.    | Medium   |          | Good      | Good      |           |           | 1 19          |
| shortleaf pine              | Pinus echinata          | WDH   | High   | 32.5       | 82.5         | 2.3 Lg. inc.   | Lg. inc.    | Medium   |          | Very Good | Very Good |           |           | 1 20          |
| pignut hickory              | Carya glabra            | WDL   | Medium | 30.8       | 77.3         | 2.2 Sm. dec.   | Sm. dec.    | Medium   |          | Poor      | Poor      |           |           | 0 21          |
| post oak                    | Quercus stellata        | WDH   | High   | 22.6       | 76.7         | 3.5 Lg. inc.   | Lg. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 22          |
| sugarberry                  | Celtis laevigata        | NDH   | Medium | 16         | 75.0         | 3.5 Lg. inc.   | Lg. inc.    | Medium   |          | Very Good | Very Good |           |           | 1 23          |
| blackgum                    | Nyssa sylvatica         | WDL   | Medium | 34.8       | 73.3         | 1.8 Lg. inc.   | Lg. inc.    | High     | Common   | Very Good | Very Good |           |           | 1 24          |
| flowering dogwood           | Cornus florida          | WDL   | Medium | 27.8       | 67.7         | 1.9 No change  | Sm. inc.    | Medium   |          | Fair      | Good      |           |           | 1 25          |
| American hornbeam; muscle   |                         | WSL   | Low    | 21.7       | 66.5         | 1.8 Lg. inc.   | Lg. inc.    | Medium   |          | Very Good | Very Good |           |           | 1 25          |
| common persimmon            | Diospyros virginiana    | NSL   | Low    | 32.4       | 66.3         | 2.0 Lg. dec.   | Sm. dec.    | High     | Common   | Fair      | Fair      |           |           | 1 27          |
| pond cypress                | Taxodium ascendens      | NSH   | Medium | 2.9        | 62.8         | 13.5 Sm. dec.  | Sm. dec.    | Medium   |          | Poor      | Poor      | Infill +  | Infill +  | 2 28          |
| American holly              | llex opaca              | NSL   | Medium | 22.5       | 50.0         | 1.9 Sm. inc.   | Sm. inc.    | Medium   |          | Fair      | Fair      |           |           | 1 29          |
| pecan                       | Carya illinoinensis     | NSH   | Low    | 5          | 45.2         | 6.2 Sm. dec.   | Sm. dec.    | Low      | Rare     | Very Poor | Very Poor |           |           | 2 30          |
| overcup oak                 | Quercus lyrata          | NSL   | Medium | 8.4        | 43.2         | 3.2 Sm. dec.   | No change   | Low      | Rare     | Very Poor | Very Poor |           |           | 0 31          |
| •                           | Platanus occidentalis   | NSL   | Low    | 7.5        | 42.8         | 4.5 Sm. dec.   | Sm. dec.    | Medium   |          | Very Poor | Very Poor |           |           | 0 32          |
| sycamore<br>river birch     |                         | NSL   | Low    | 7.5<br>8.9 | 40.6<br>34.6 | 2.9 Sm. inc.   |             | Medium   |          | Fair      | Fair      |           |           | 1 33          |
|                             | Betula nigra            | NSL   | Medium | 14.6       |              |                | Sm. inc.    |          |          | Good      | Good      |           |           | 1 34          |
| sweetbay                    | Magnolia virginiana     |       |        |            | 34.3         | 1.7 Lg. inc.   | Lg. inc.    | Medium   |          |           |           |           |           |               |
| swamp chestnut oak          | Quercus michauxii       | NSL   | Low    | 10.8       | 34.1         | 2.5 Sm. dec.   | Lg. dec.    | Medium   |          | Very Poor | Very Poor |           | 1f:11     | 0 35          |
| turkey oak                  | Quercus laevis          | NSH   | Medium | 3.8        | 33.0         | 5.9 Sm. dec.   | Sm. dec.    | High     | Rare     | Poor      | Poor      | 1.011.    | Infill +  | 2 36          |
| American beech              | Fagus grandifolia       | WDH   | High   | 7.3        | 31.8         | 2.6 No change  | No change   | Medium   | Rare     | Poor      | Poor      | Infill +  |           | 2 37          |
| sand pine                   | Pinus clausa            | NDH   | High   | 1          | 30.2         | 31.5 Sm. dec.  | Sm. dec.    | Low      | Rare     | Very Poor | Very Poor |           |           | 0 38          |
| florida maple               | Acer barbatum           | NSL   | Low    | 18.6       | 29.1         | 1.2 Lg. dec.   | Lg. dec.    | High     | Rare     | Poor      | Poor      |           |           | 1 39          |
| red mulberry                | Morus rubra             | NSL   | Low    | 14.9       | 27.2         | 1.3 Lg. dec.   | Sm. dec.    | Medium   |          | Very Poor | Very Poor |           |           | 0 40          |
| water tupelo                | Nyssa aquatica          | NSH   | Medium | 5.3        | 26.0         | 2.6 Sm. dec.   | Sm. dec.    | Low      | Rare     | Very Poor | Very Poor |           |           | 2 41          |
| eastern hophornbeam; ironv  | , .                     | WSL   | Low    | 10.1       | 17.3         | 1.3 Lg. inc.   | Lg. inc.    | High     | Rare     | Good      | Good      |           |           | 1 42          |
| southern magnolia           | Magnolia grandiflora    | NSL   | Low    | 7.2        | 14.5         | 1.0 Sm. inc.   | Sm. inc.    | Medium   |          | Fair      | Fair      | Infill +  | Infill +  | 1 43          |
| black oak                   | Quercus velutina        | WDH   | High   | 5.3        | 13.2         | 1.5 Lg. dec.   | Lg. dec.    | Medium   | Rare     | Very Poor | Very Poor |           |           | 0 44          |
| blackjack oak               | Quercus marilandica     | NSL   | Medium | 3.4        | 12.9         | 3.3 Lg. inc.   | Lg. inc.    | High     | Rare     | Good      | Good      | Infill ++ | Infill ++ | 2 45          |
| slippery elm                | Ulmus rubra             | WSL   | Low    | 7.8        | 11.8         | 1.2 No change  | No change   | Medium   | Rare     | Poor      | Poor      | Infill +  | Infill +  | 1 46          |
| cherrybark oak; swamp red c | Quercus pagoda          | NSL   | Medium | 3.3        | 11.6         | 2.9 No change  | No change   | Medium   | Rare     | Poor      | Poor      | Infill +  | Infill +  | 2 47          |
|                             |                         |       |        |            |              |                |             |          |          |           |           |           |           |               |



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| bede   Add   Add </th <th>Common Name</th> <th>Scientific Name</th> <th>Range</th> <th>MR</th> <th>%Cell</th> <th>FIAsum</th> <th>FIAiv ChngCl45</th> <th>ChngCl85</th> <th>Adap</th> <th>Abund</th> <th>Capabil45</th> <th>Capabil85</th> <th>SHIFT45 SHIFT8</th> <th>5 SSO N</th>   | Common Name            | Scientific Name             | Range | MR     | %Cell | FIAsum | FIAiv ChngCl45    | ChngCl85      | Adap   | Abund  | Capabil45   | Capabil85   | SHIFT45 SHIFT8      | 5 SSO N  |
|---|------------------------|-----------------------------|-------|--------|-------|--------|-------------------|---------------|--------|--------|-------------|-------------|---------------------|----------|
| exterJuniperus viginanaWDMedium8.21.21.0LLMediumRareGoodGoodMill+MIII+1.00.5spruce pinePrus glabraMSLWDMediumA5.2Sin.dec.MediumRareNertNert PoorNert Poor <td>boxelder</td> <td>Acer negundo</td> <td>WSH</td> <td>Low</td> <td>3.8</td> <td>10.7</td> <td>1.4 Sm. dec.</td> <td>Sm. dec.</td> <td>High</td> <td>Rare</td> <td>Poor</td> <td>Poor</td> <td>Infill +</td> <td>2 48</td>   | boxelder               | Acer negundo                | WSH   | Low    | 3.8   | 10.7   | 1.4 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        | Infill +            | 2 48     |
| scarie loak   Ouersus cocumea   WD.   Netdum   A.2   A.2   J.1   L.g. dec.   Medium   Rare   Very Poor   Very Poor   Very Poor   0   5.2     spruce pine   Persea borbonia   NSL   Low   2.9   S.9   2.1   Sm. dec.   Sm. dec.   High   Rare   Poor   Poor   Poor   0.53     shagbark hickory   Cetis occidentials   WD   Medium   3.8   5.9   1.3   Sm. dec.   High   Rare   Poor   Poor   Poor   0.53     siber maple   Acer saccharinum   NSL   Low   4.5   5.8   Sm. dec.   High   Rare   Poor   Poor   Poor   1.57     onthern med oak   Quercus rubra   NDL   High   2.7   2.1   Sm. dec.   High   Rare   Poor   Poor   Poor   1.57     onthern med oak   Quercus rubra   NDL   Hold   2.3   Sm. dec.   Sm. dec.   Medium   Rare   NDL   Poor   <   | sassafras              | Sassafras albidum           | WSL   | Low    | 7.9   | 10.6   | 1.1 Sm. inc.      | Lg. inc.      | Medium | Rare   | Fair        | Good        | Infill + Infill ++  | 1 49     |
| spruce pinePinus glubaNSLUo1.46.12.1SinderMediaRiceMediaNiceMedia0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2Media0.2MediaM  | eastern redcedar       | Juniperus virginiana        | WDH   | Medium | 10    | 8.2    | 1.2 Lg. inc.      | Lg. inc.      | Medium | Rare   | Good        | Good        | Infill ++ Infill ++ | 1 50     |
| pedbay   Perso   borbonia   NSL   Low   2,9   5,9   2,1   Sm. dec.   High   Rare   Poor   | scarlet oak            | Quercus coccinea            | WDL   | Medium | 4.3   | 7.3    | 1.4 Lg. dec.      | Lg. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 51     |
| backbornyCellis oricidentilisWDHMedlum31S.91.3 Sm.dec.Mude.MaleNerPoorPoorPoorPoorStorS   | spruce pine            | Pinus glabra                | NSL   | Low    | 1.4   | 6.1    | 2.3 Sm. dec.      | Sm. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 52     |
| shaghak hickory Caray avata WSL Medlu 3.8 S.6 1.5 Lg dec. Lg dec. Medlum Rare Very Poor Very Poor (000) 5.5   silver maple Acer saccharium NSL Low 4.5 S.6 S.6 M.dec. High Rare Poor Poor Poor [000] 5.5   norther red oak Quecrus rubra WDH Mediu 3.9 S.3 1.0 Lg dec. Lg dec. High Rare Poor Poor Poor 0.0 0.0 5.8   allanthus Allanthus sitisima NSL FA 1.0 S.7 S.1 N.R.dec. S.7 S.7 S.5 S.5<   | redbay                 | Persea borbonia             | NSL   | Low    | 2.9   | 5.9    | 2.1 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        |                     | 1 53     |
| silver mapleAcer vacchniumNSHLowALSS.4S.6 Sn. dec.Sm. dec.HighArePoorPoorPoorInfill1STeastern redbudCercis canadensisNSLLowALSS.5S.1No chaneNo chaneNedhunPoorPoorPoorInfill1STsourwoodOxydendru arboreumNDLHigh2.7S.2S.1Sn. dec.Sm. dec.HighRarePoorPoorPoor000STalanthusAlsinan basedoacaiaNDLHigh2.7S.2S.1Sn. dec.Sm. dec.HighRarePoorPoorPoor000 <td< td=""><td>hackberry</td><td>Celtis occidentalis</td><td>WDH</td><td>Medium</td><td>3.1</td><td>5.9</td><td>1.3 Sm. dec.</td><td>Sm. dec.</td><td>High</td><td>Rare</td><td>Poor</td><td>Poor</td><td></td><td>0 54</td></td<>   | hackberry              | Celtis occidentalis         | WDH   | Medium | 3.1   | 5.9    | 1.3 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 54     |
| eastern red oukCercis canadensisNSLLow455.41.1 No changeNo changeMediuRarePoorPoorPoorInfill +157northern red oakQuercus rubraWDHHgh2.75.21.5 m. dec.HghRarePoorPoorPoorPoor0058allanthusAllanthus altissimaNSLHgh0.63.72.5 Ur. KnownUnknownNARareNSLNISNIS00   | shagbark hickory       | Carya ovata                 | WSL   | Medium | 3.8   | 5.6    | 1.5 Lg. dec.      | Lg. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 55     |
| northern red oak   Quercus rubra   WDH   Medium   3.9   5.3   1.0 lg, dec.   lg, dec.   High   Rare   Poor  | silver maple           | Acer saccharinum            | NSH   | Low    | 1     | 5.4    | 5.6 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 56     |
| sourwood   Oxydendrum arboreum   NDL   High   S.2   S.2   S.1.2   S.m. dec.   High   Rare   Poor   Poor <th< td=""><td>eastern redbud</td><td>Cercis canadensis</td><td>NSL</td><td>Low</td><td>4.5</td><td>5.4</td><td>1.1 No change</td><td>No change</td><td>Medium</td><td>Rare</td><td>Poor</td><td>Poor</td><td>Infill +</td><td>1 57</td></th<>   | eastern redbud         | Cercis canadensis           | NSL   | Low    | 4.5   | 5.4    | 1.1 No change     | No change     | Medium | Rare   | Poor        | Poor        | Infill +            | 1 57     |
| alianthusNianthus altissimaNisFiA0.63.72.5UnknownNaRaveRaveNNISNNIS10.6000 <td>northern red oak</td> <td>Quercus rubra</td> <td>WDH</td> <td>Medium</td> <td>3.9</td> <td>5.3</td> <td>1.0 Lg. dec.</td> <td>Lg. dec.</td> <td>High</td> <td>Rare</td> <td>Poor</td> <td>Poor</td> <td></td> <td>0 58</td>  | northern red oak       | Quercus rubra               | WDH   | Medium | 3.9   | 5.3    | 1.0 Lg. dec.      | Lg. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 58     |
| black locust Robinia pseudoacacia NDH Low 1 3.6 3.7 Sm. dec. Medium Rare Very Poor  | sourwood               | Oxydendrum arboreum         | NDL   | High   | 2.7   | 5.2    | 1.1 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 59     |
| water hickory Carya aquatica NSL Medium 1 3.5 3.6 Sm. dec. Sm. dec. Medium Rare Very Poor Very Poor Very Poor 0 62   ogeechee tupelo Myssa ogeche NSLX F/A 0.3 3.4 1.2 Unknown Unknown Low Rare F/A Only  | ailanthus              | Ailanthus altissima         | NSL   | FIA    | 0.6   | 3.7    | 2.5 Unknown       | Unknown       | NA     | Rare   | NNIS        | NNIS        |                     | 0 60     |
| ogeche   Nysa ogeche   NSL   FIA   0.3   3.4   1.2   Unknown   Low   Rare   FIA Only   FIA Only   FIA Only     bitternut hickory   Carya cordiformis   WSL   Low   1.8   3.0   1.5   Sn. dec.   Sn. dec.   High   Rare   Poor   Poor   Poor   Poor   0.63     pand pine   Pinus servina   NSH   Medium   1.1   1.7   0.6   Very Lg. dec.   Very Lg. dec.   Wedium   Rare   Very Poor  | black locust           | Robinia pseudoacacia        | NDH   | Low    | 1     | 3.6    | 3.7 Sm. dec.      | Sm. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 61     |
| bitternut hickoryCarya cordiformisWSLLow1.83.01.5Sm. dec.MighRarePoorPoorPoorPoor000 </td <td>water hickory</td> <td>Carya aquatica</td> <td>NSL</td> <td>Medium</td> <td>1</td> <td>3.5</td> <td>3.6 Sm. dec.</td> <td>Sm. dec.</td> <td>Medium</td> <td>Rare</td> <td>Very Poor</td> <td>Very Poor</td> <td></td> <td>0 62</td>   | water hickory          | Carya aquatica              | NSL   | Medium | 1     | 3.5    | 3.6 Sm. dec.      | Sm. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 62     |
| chestnut oak Quercus prinus NDH High 2.3 2.2 0.7 Lg. dec. High Rare Poor <   | ogeechee tupelo        | Nyssa ogeche                | NSLX  | FIA    | 0.3   | 3.4    | 1.2 Unknown       | Unknown       | Low    | Rare   | FIA Only    | FIA Only    |                     | 0 63     |
| pond pinePinus serotinaNSHMedium1.11.70.6 Very Lg. dc.Very Lg. dc.VewRareLostLostLost0.66pawpawAsinina trilobaNSLLow1.81.60.8 Sm. dc.Sm. dc.MediumRareVery PoorVery PoorVery Poor0.2  | bitternut hickory      | Carya cordiformis           | WSL   | Low    | 1.8   | 3.0    | 1.5 Sm. dec.      | Sm. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 64     |
| pawpawAsimina trilobaNSLLow1.81.60.8Sm. dec.Sm. dec.MediumRareVery PoorVery PoorVery Poor007live oakQuercus virginianaNDHHigh11.51.5Lg. inc.Lg. inc.MediumRareGoodGood268white ashFraxinus americanaWDLMediu11.31.3No changeNo changeLowRareFIA OnlyFIA OnlyFIA Only70Shumard oakQuercus shumardiiNSLFIA0.40.90.3UnknownUnknownNARareNISNIS7173white mulberryMorus albaNSLFIA0.40.90.3UnknownUnknownNARareNISNIS73blejack oakQuercus incanaNSLFIA0.40.71Lg. inc.NethiumNatomu   | chestnut oak           | Quercus prinus              | NDH   | High   | 2.3   | 2.2    | 0.7 Lg. dec.      | Lg. dec.      | High   | Rare   | Poor        | Poor        |                     | 0 65     |
| live oak<br>live oakQuercus virginianaNDHHigh<br>High11.51.5Lg. inc.Lg. inc.MediumRareGodGodGod268white ashFraxinus americanaWDLMedium11.31.3No changeLowRareVery PoorVery PoorVery Poor0069sand hickoryCarya pallidaNSLFIA11.11.1UnknownNARareFIA OnlyFIA Only71Shumard oakQuercus shumardiiNSLFIA0.40.90.3UnknownUnknownNARareNISNIS71wihte mulberryMorus albaNSLFIA0.40.90.3UnknownUnknownNARareNISNIS71wild plumPrunus americanaNSLFIA1.20.80.3UnknownUnknownMARareGodGod274able jack oakQuercus incanaNSLFIA1.20.80.3UnknownUnknownMediumRareGodGod072serviceberryJuniperus asheiNDHHigh000UnknownMediumAbsentNew HabitatNew Habitat377cittamwood/gum bumeliaSideroxylon lanuginosum ssp. NSLLow000New HabitatMediumAbsentNew HabitatNew Habitat378bellack hickoryCarya laciniosaN   | pond pine              | Pinus serotina              | NSH   | Medium | 1.1   | 1.7    | 0.6 Very Lg. dec. | Very Lg. dec. | Low    | Rare   | Lost        | Lost        |                     | 0 66     |
| white ashFraxinus americanaWDLMedium11.31.3No changeNo changeLowRareVery PoorVery PoorVery Poor000 <th< td=""><td>pawpaw</td><td>Asimina triloba</td><td>NSL</td><td>Low</td><td>1.8</td><td>1.6</td><td>0.8 Sm. dec.</td><td>Sm. dec.</td><td>Medium</td><td>Rare</td><td>Very Poor</td><td>Very Poor</td><td></td><td>0 67</td></th<>   | pawpaw                 | Asimina triloba             | NSL   | Low    | 1.8   | 1.6    | 0.8 Sm. dec.      | Sm. dec.      | Medium | Rare   | Very Poor   | Very Poor   |                     | 0 67     |
| sand hickoryCarya pallidaNSLFIA11.11.1UnknownNARareFIA OnlyFIA OnlyFIA OnlyO 70Shumard oakQuercus shumardiiNSLLow10.90.9Lg. dec.No changeHighRarePoorFair0.70Withe nulberryMorus albaNSLFIA0.40.90.3UnknownUnknownNARareNNISNNIS0.72wild plumPrunus americanaNSLFIA1.20.80.3UnknownUnknownMediumRareGood6ood2.74ashe juniperuJuniperus asheiNDHHigh000New HabitatMediumAbsentNew HabitatNew Habitat0.75Virginia pinePinus virginianaNDHHigh0000New HabitatMediumAbsentNew HabitatNew Habitat0.76serviceberryAmelanchier spp.NSLLow000New HabitatNew Habit  | live oak               | Quercus virginiana          | NDH   | High   | 1     | 1.5    | 1.5 Lg. inc.      | Lg. inc.      | Medium | Rare   | Good        | Good        |                     | 2 68     |
| Shumard oakQuercus shumardiiNSLLow10.90.9lg. dec.No changeHighRarePoorFair0071white mulberryMorus albaNSLFIA0.40.90.3UnknownNARareNNISNNIS072wild plumPrunus americanaNSLFIA1.20.80.3UnknownMediumRareFIA OnlyFIA Only73bluejack oakQuercus incanaNSLLow10.70.7lg. inc.Lg. inc.MediumRareGoodGoodCood274ashe juniperJuniperus asheiNDHHigh000New HabitatMediumAbsentNew HabitatNew Habitat075Virginia pinePinus virginianaNDHHigh000New HabitatMediumAbsentNew HabitatNew Habitat76serviceberryAmelanchier spp.NSLLow00New HabitatNew H  | white ash              | Fraxinus americana          | WDL   | Medium | 1     | 1.3    | 1.3 No change     | No change     | Low    | Rare   | Very Poor   | Very Poor   |                     | 0 69     |
| white mulberryMorus albaNSLFIA0.40.90.3UnknownNARareNNISNNIS072wild plumPrunus americanaNSLXFIA1.20.80.3UnknownUnknownMediumRareFIA OnlyFIA Only073bluejack oakQuercus incanaNSLLow10.70.7Lg. inc.Lg. inc.MediumRareGoodGood274ashe juniperJuniperus asheiNDHHigh000New HabitatNew   | sand hickory           | Carya pallida               | NSL   | FIA    | 1     | 1.1    | 1.1 Unknown       | Unknown       | NA     | Rare   | FIA Only    | FIA Only    |                     | 0 70     |
| wild plumPrunus americanaNSLXFIA1.20.80.3UnknownUnknownMediumRareFIA OnlyFIA Only   | Shumard oak            | Quercus shumardii           | NSL   | Low    | 1     | 0.9    | 0.9 Lg. dec.      | No change     | High   | Rare   | Poor        | Fair        |                     | 0 71     |
| bluejack oakQuercus incanaNSLLow10.70.7Lg. inc.Lg. inc.MediumRareGoodGoodCod274ashe juniperJuniperus asheiNDHHigh00New HabitatNew HabitatMediumAbsentNew HabitatNew Habitat <t< td=""><td>white mulberry</td><td>Morus alba</td><td>NSL</td><td>FIA</td><td>0.4</td><td>0.9</td><td>0.3 Unknown</td><td>Unknown</td><td>NA</td><td>Rare</td><td>NNIS</td><td>NNIS</td><td></td><td>0 72</td></t<> | white mulberry         | Morus alba                  | NSL   | FIA    | 0.4   | 0.9    | 0.3 Unknown       | Unknown       | NA     | Rare   | NNIS        | NNIS        |                     | 0 72     |
| ashe juniperJuniperus asheiNDHHigh000New HabitatNew HabitatMediumAbsentNew HabitatNew HabitatNew Habitat0075Virginia pinePinus virginianaNDHHigh000UnknownUnknownMediumAbsentMediumAbsentUnknownUnknown076serviceberryAmelanchier spp.NSLLow000New HabitatNew HabitatMediumAbsentNew HabitatNew Habitat <td>wild plum</td> <td>Prunus americana</td> <td>NSLX</td> <td>FIA</td> <td>1.2</td> <td>0.8</td> <td>0.3 Unknown</td> <td>Unknown</td> <td>Medium</td> <td>Rare</td> <td>FIA Only</td> <td>FIA Only</td> <td></td> <td>0 73</td>                              | wild plum              | Prunus americana            | NSLX  | FIA    | 1.2   | 0.8    | 0.3 Unknown       | Unknown       | Medium | Rare   | FIA Only    | FIA Only    |                     | 0 73     |
| Virginia pinePinus virginianaNDHHigh0000UnknownMediumAbsentUnknownUnknownUnknown076serviceberryAmelanchier spp.NSLLow000New HabitatMediumAbsentNew HabitatNew  | bluejack oak           | Quercus incana              | NSL   | Low    | 1     | 0.7    | 0.7 Lg. inc.      | Lg. inc.      | Medium | Rare   | Good        | Good        |                     | 2 74     |
| serviceberryAmelanchier spp.NSLLow000New HabitatNew HabitatMediumAbsentNew HabitatNew Habitat  | ashe juniper           | Juniperus ashei             | NDH   | High   | 0     | 0      | 0 New Habitat     | New Habitat   | Medium | Absent | New Habitat | New Habitat |                     | 0 75     |
| cittamwool/gum bumeliaSideroxylon lauginosum ssp. NSLLow000New HabitatNew HabitatHighAbsentNew HabitatNew Habit  | Virginia pine          | Pinus virginiana            | NDH   | High   | 0     | 0      | 0 Unknown         | Unknown       | Medium | Absent | Unknown     | Unknown     |                     | 0 76     |
| shellbark hickoryCarya laciniosaNSLLow000New HabitatNew Ha   | serviceberry           | Amelanchier spp.            | NSL   | Low    | 0     | 0      | 0 New Habitat     | New Habitat   | Medium | Absent | New Habitat | New Habitat |                     | 3 77     |
| black hickoryCarya texanaNDLHigh000New HabitatNew Habitat<   | cittamwood/gum bumelia | Sideroxylon lanuginosum ssp | . NSL | Low    | 0     | 0      | 0 New Habitat     | New Habitat   | High   | Absent | New Habitat | New Habitat |                     | 3 78     |
| black ashFraxinus nigraWSHMedium000UnknownNew HabitatLowAbsentUnknownNew HabitatNew Habitat0081honeylocustGleditsia triacanthosNSHLow00New HabitatNew HabitatHighAbsentNew HabitatNew HabitatMigrate +382silverbellHalesia spp.NSLLow00UnknownUnknownMediumAbsentUnknownUnknown083cucumbertreeMagnolia acuminataNSLLow00UnknownUnknownMediumAbsentUnknownUnknown084pin cherryPrunus pensylvanicaNSLLow00UnknownMediumAbsentUnknownUnknown085  | shellbark hickory      | Carya laciniosa             | NSL   | Low    | 0     | 0      | 0 New Habitat     | New Habitat   | Medium | Absent | New Habitat | New Habitat |                     | 3 79     |
| honeylocustGleditsia triacanthosNSHLow000New HabitatHighAbsentNew HabitatNew HabitatMigrate +382silverbellHalesia spp.NSLLow00UnknownUnknownMediumAbsentUnknownUnknownUnknown0083cucumbertreeMagnolia acuminataNSLLow00UnknownUnknownMediumAbsentUnknownUnknown084pin cherryPrunus pensylvanicaNSLLow00UnknownUnknownMediumAbsentUnknownUnknown085  | black hickory          | Carya texana                | NDL   | High   | 0     | 0      | 0 New Habitat     | New Habitat   | Medium | Absent | New Habitat | New Habitat |                     | 3 80     |
| silverbellHalesia spp.NSLLow000UnknownMedium<br>MediumAbsentUnknownUnknownUnknown083cucumbertreeMagnolia acuminataNSLLow000UnknownMedium<br>MediumAbsentUnknownUnknown084pin cherryPrunus pensylvanicaNSLLow000UnknownMedium<br>MediumAbsentUnknownUnknown085   | black ash              | Fraxinus nigra              | WSH   | Medium | 0     | 0      | 0 Unknown         | New Habitat   | Low    | Absent | Unknown     | New Habitat |                     | 0 81     |
| cucumbertreeMagnolia acuminataNSLLow000UnknownMediumAbsentUnknownUnknownUnknown084pin cherryPrunus pensylvanicaNSLLow00UnknownUnknownMediumAbsentUnknownUnknown085  | honeylocust            | Gleditsia triacanthos       | NSH   | Low    | 0     | 0      | 0 New Habitat     | New Habitat   | High   | Absent | New Habitat | New Habitat | Migrate             | e + 3 82 |
| cucumbertreeMagnolia acuminataNSLLow000UnknownMediumAbsentUnknownUnknownUnknown084pin cherryPrunus pensylvanicaNSLLow00UnknownUnknownMediumAbsentUnknownUnknown085  | ,                      |                             |       | Low    | 0     | 0      |                   |               | U      |        |             |             | 0                   |          |
| pin cherry Prunus pensylvanica NSL Low 0 0 0 Unknown Unknown Medium Absent Unknown Unknown 0 85   |                        | ••                          |       |        | 0     | 0      |                   |               |        |        |             |             |                     |          |
|   | pin cherry             | 0                           |       | Low    | 0     | 0      | 0 Unknown         | Unknown       | Medium |        |             | Unknown     |                     |          |
|   |                        |                             |       |        |       |        |                   |               |        |        |             |             |                     |          |

