

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	8,985.5	3,469.3	14

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		
		Abundant	Common	Reliability	Adaptability	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT	
												RCP45
Ash	1			High	5	12	Increase	4	5	Very Good	0	0
Hickory	0			Medium	12	19	No Change	6	5	Good	4	3
Maple	1	Abundant	0	Low	14	2	Decrease	1	1	Fair	2	4
Oak	1	Common	1	FIA	2		New	18	19	Poor	5	4
Pine	0	Rare	12				Unknown	4	3	Very Poor	0	0
Other	10	Absent	19							FIA Only	2	2
	<b>13</b>		<b>32</b>		<b>33</b>	<b>33</b>		<b>33</b>	<b>33</b>	Unknown	2	1
											<b>15</b>	<b>14</b>

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	48.0	49.8	52.1	52.8	
Average	CCSM85	48.0	50.3	53.0	56.2	
	GFDL45	48.0	53.9	52.4	53.9	
	GFDL85	48.0	50.6	53.7	58.2	
	HAD45	48.0	50.9	54.6	56.0	
	HAD85	48.0	51.4	56.6	60.6	
Growing Season	CCSM45	67.6	69.7	72.4	73.1	
	CCSM85	67.6	70.6	73.1	77.2	
May—Sep	GFDL45	67.6	75.5	73.5	75.5	
	GFDL85	67.6	71.0	74.7	80.3	
	HAD45	67.6	70.2	73.1	74.7	
	HAD85	67.6	70.5	75.0	79.3	
Coldest Month	CCSM45	18.3	20.3	21.4	22.4	
	CCSM85	18.3	19.6	20.9	23.1	
Average	GFDL45	18.3	21.5	22.0	22.5	
	GFDL85	18.3	21.2	22.6	24.3	
	HAD45	18.3	20.8	24.6	23.8	
	HAD85	18.3	23.9	28.6	30.3	
Warmest Month	CCSM45	75.3	77.9	79.8	80.5	
	CCSM85	75.3	79.1	80.8	83.8	
Average	GFDL45	75.3	78.9	80.4	81.6	
	GFDL85	75.3	79.6	81.2	84.9	
	HAD45	75.3	78.3	80.1	81.2	
	HAD85	75.3	79.1	81.7	84.5	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	22.8	23.4	22.4	22.2	
Total	CCSM85	22.8	22.4	23.5	23.8	
	GFDL45	22.8	26.9	29.3	28.2	
	GFDL85	22.8	26.3	29.9	29.5	
	HAD45	22.8	26.0	25.0	26.1	
	HAD85	22.8	24.7	25.5	27.6	
Growing Season	CCSM45	14.8	14.5	13.6	13.0	
	CCSM85	14.8	13.4	14.4	13.6	
May—Sep	GFDL45	14.8	17.8	19.3	17.9	
	GFDL85	14.8	17.4	18.9	18.2	
	HAD45	14.8	15.8	14.7	14.8	
	HAD85	14.8	14.5	14.2	13.5	

**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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One x One Degree  
Climate Change Atlas Tree Species

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

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
green ash	Fraxinus pennsylvanica	WSH	Low	19.4	59.1	39.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
eastern cottonwood	Populus deltoides	NSH	Low	11.1	48.8	41.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
bur oak	Quercus macrocarpa	NDH	Medium	10.7	44.6	41.0	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	3
eastern redcedar	Juniperus virginiana	WDH	Medium	16.9	36.4	32.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	4
American elm	Ulmus americana	WDH	Medium	11.4	36.1	41.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	5
peachleaf willow	Salix amygdaloides	NSLX	FIA	4.5	10.0	35.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	6
black walnut	Juglans nigra	WDH	Low	4.5	8.4	30.2	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	7
hackberry	Celtis occidentalis	WDH	Medium	2.5	2.3	4.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	8
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	8.2	1.9	2.9	No change	No change	High	Rare	Fair	Fair	Infill +		2	9
boxelder	Acer negundo	WSH	Low	2.5	1.8	3.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	10
American basswood	Tilia americana	WSL	Medium	3.8	0.7	2.0	Lg. inc.	Sm. inc.	Medium	Rare	Good	Fair		Infill +	2	11
slippery elm	Ulmus rubra	WSL	Low	4.4	0.4	1.2	No change	No change	Medium	Rare	Poor	Poor			0	12
chokecherry	Prunus virginiana	NSLX	FIA	4.4	0.3	1.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	13
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	14
sugar maple	Acer saccharum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	15
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	16
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	17
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	18
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	19
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	20
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	21
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	22
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	23
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	24
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	25
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	26
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	27
northern red oak	Quercus rubra	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	28
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	29
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	30
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	31
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	32
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	33