

sq. km    sq. mi    FIA Plots  
Area of Region    25,210    9,733.7    52

### 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	1			High	4	11	Increase	1	1	Very Good	0	0	Likely	1	1
Hickory	1			Medium	13	24	No Change	12	12	Good	2	1	Infill	12	15
Maple	2	Abundant	0	Low	19	4	Decrease	7	7	Fair	7	8	Migrate	5	7
Oak	3	Common	6	FIA	5		New	12	12	Poor	7	8			
Pine	0	Rare	19				Unknown	9	9	Very Poor	4	3			
Other	18	Absent	15							FIA Only	3	3			
	<b>25</b>		<b>40</b>		<b>41</b>	<b>39</b>		<b>41</b>	<b>41</b>	Unknown	4	4		<b>18</b>	<b>23</b>
											<b>27</b>	<b>27</b>			

### Potential Changes in Climate Variables

#### Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	46.2	47.5	48.9	49.4	
Average	CCSM85	46.2	47.9	49.6	51.6	
	GFDL45	46.2	50.4	49.6	50.6	
	GFDL85	46.2	48.2	50.4	53.5	
	HAD45	46.2	48.1	50.4	51.1	
	HAD85	46.2	48.4	51.9	54.2	
Growing Season	CCSM45	59.5	61.0	62.5	63.1	
	CCSM85	59.5	61.5	63.2	65.6	
May—Sep	GFDL45	59.5	65.0	63.7	65.3	
	GFDL85	59.5	62.1	64.6	68.5	
	HAD45	59.5	61.0	62.9	63.5	
	HAD85	59.5	61.5	65.0	67.1	
Coldest Month	CCSM45	25.9	27.4	28.2	28.9	
	CCSM85	25.9	27.6	28.3	29.6	
Average	GFDL45	25.9	28.3	28.6	28.8	
	GFDL85	25.9	27.5	28.6	29.5	
	HAD45	25.9	27.6	29.8	29.6	
	HAD85	25.9	29.5	31.7	33.1	
Warmest Month	CCSM45	64.3	66.0	67.2	67.6	
	CCSM85	64.3	67.0	68.1	69.6	
Average	GFDL45	64.3	67.0	67.9	69.0	
	GFDL85	64.3	67.4	68.4	71.2	
	HAD45	64.3	65.8	67.1	67.5	
	HAD85	64.3	67.1	68.9	70.1	

#### Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	21.4	22.1	22.1	21.2	
Total	CCSM85	21.4	21.8	21.7	22.6	
	GFDL45	21.4	23.9	25.7	24.5	
	GFDL85	21.4	24.1	26.9	25.5	
	HAD45	21.4	24.0	23.7	24.4	
	HAD85	21.4	22.8	22.3	24.3	
Growing Season	CCSM45	13.8	13.8	13.3	12.9	
	CCSM85	13.8	13.3	12.7	13.3	
May—Sep	GFDL45	13.8	15.6	16.3	15.0	
	GFDL85	13.8	15.4	17.0	15.6	
	HAD45	13.8	14.6	14.9	15.0	
	HAD85	13.8	14.2	13.2	13.2	

**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
hackberry	Celtis occidentalis	WDH	Medium	25.5	93.4	17.6	No change	Sm. dec.	High	Common	Good	Fair	Infill ++	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	18.1	80.5	23.6	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	2
green ash	Fraxinus pennsylvanica	WSH	Low	27.3	75.8	14.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	3
American elm	Ulmus americana	WDH	Medium	30.1	73.4	11.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	4
eastern redcedar	Juniperus virginiana	WDH	Medium	20.8	67.6	13.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	5
red mulberry	Morus rubra	NSL	Low	25.4	59.2	14.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	6
eastern cottonwood	Populus deltoides	NSH	Low	8.4	23.0	11.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	7
honeylocust	Gleditsia triacanthos	NSH	Low	17.1	15.4	11.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	8
black walnut	Juglans nigra	WDH	Low	7.5	15.3	8.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	9
black willow	Salix nigra	NSH	Low	5.8	13.8	13.6	No change	No change	Low	Rare	Very Poor	Very Poor			2	10
Osage-orange	Maclura pomifera	NDH	Medium	5.8	13.8	7.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	11
chinkapin oak	Quercus muehlenbergii	NSL	Medium	2.5	12.6	5.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	12
white mulberry	Morus alba	NSL	FIA	1.9	9.9	4.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	13
black locust	Robinia pseudoacacia	NDH	Low	1.6	9.9	100.0	Lg. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	14
Siberian elm	Ulmus pumila	NDH	FIA	2.6	9.0	11.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	15
peachleaf willow	Salix amygdaloides	NSLX	FIA	0.5	4.1	2.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	16
slippery elm	Ulmus rubra	WSL	Low	8.8	2.4	3.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	17
eastern redbud	Cercis canadensis	NSL	Low	2.2	2.1	1.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	18
boxelder	Acer negundo	WSH	Low	2	2.0	2.7	No change	No change	High	Rare	Fair	Fair		Infill +	2	19
northern red oak	Quercus rubra	WDH	Medium	0.2	1.9	2.9	No change	No change	High	Rare	Fair	Fair		Infill +	2	20
bitternut hickory	Carya cordiformis	WSL	Low	1.8	1.7	1.7	No change	No change	High	Rare	Fair	Fair			0	21
silver maple	Acer saccharinum	NSH	Low	2.9	1.4	6.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	22
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	1.6	0.2	1.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			2	23
American basswood	Tilia americana	WSL	Medium	0.5	0.2	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	24
wild plum	Prunus americana	NSLX	FIA	1.6	0.1	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	25
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	26
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	27
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	28
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	29
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	30
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	31
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	32
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	33
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	34
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	35
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	36
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	37
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	38
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	39
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	40
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	41