

	sq. km	sq. mi	FIA Plots
Area of Region	9,000.0	3,474.9	158

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	3			High	13	19	Increase	18	14	Very Good	8	4	Likely	2	2
Hickory	1			Medium	23	32	No Change	8	13	Good	7	11	Infill	21	21
Maple	4	Abundant	2	Low	21	10	Decrease	13	12	Fair	8	10	Migrate	3	5
Oak	5	Common	21	FIA	7		New	14	15	Poor	9	7			
Pine	4	Rare	23				Unknown	11	10	Very Poor	5	5			
Other	29	Absent	17							FIA Only	4	4			
	46		63		64	61		64	64	Unknown	4	3			
											45	44			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	45.0	46.9	50.0	50.3	
Average	CCSM85	45.0	47.8	51.0	54.5	
	GFDL45	45.0	49.7	50.5	51.9	
	GFDL85	45.0	48.3	51.7	56.6	
	HAD45	45.0	48.0	51.9	53.8	
	HAD85	45.0	48.7	53.1	58.5	
Growing Season	CCSM45	65.7	67.6	70.3	70.8	
	CCSM85	65.7	68.6	71.6	75.8	
May—Sep	GFDL45	65.7	71.1	72.1	74.1	
	GFDL85	65.7	69.5	73.3	79.0	
	HAD45	65.7	68.7	71.7	74.0	
	HAD85	65.7	68.9	73.5	78.8	
Coldest Month	CCSM45	12.1	13.8	16.3	16.8	
	CCSM85	12.1	14.3	16.6	19.0	
Average	GFDL45	12.1	15.8	17.3	17.6	
	GFDL85	12.1	15.9	17.7	20.6	
	HAD45	12.1	13.6	17.9	17.8	
	HAD85	12.1	17.5	21.1	24.5	
Warmest Month	CCSM45	72.1	74.6	76.1	76.7	
	CCSM85	72.1	75.9	77.8	80.4	
Average	GFDL45	72.1	75.3	76.8	78.4	
	GFDL85	72.1	76.2	78.1	81.7	
	HAD45	72.1	75.3	77.1	78.6	
	HAD85	72.1	76.5	78.8	82.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	31.8	32.9	32.4	31.7	
Total	CCSM85	31.8	31.3	31.2	31.8	
	GFDL45	31.8	35.1	37.1	34.0	
	GFDL85	31.8	35.0	37.9	36.3	
	HAD45	31.8	34.1	33.6	33.7	
	HAD85	31.8	33.2	34.0	36.1	
Growing Season	CCSM45	20.2	20.4	19.4	19.2	
	CCSM85	20.2	19.3	18.2	17.7	
May—Sep	GFDL45	20.2	22.1	22.8	20.1	
	GFDL85	20.2	22.1	22.4	20.4	
	HAD45	20.2	20.5	19.1	19.2	
	HAD85	20.2	19.6	18.2	18.4	

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
boxelder	Acer negundo	WSH	Low	71.1	563.2	16.3	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
quaking aspen	Populus tremuloides	WDH	High	44.4	558.4	20.1	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	2
American elm	Ulmus americana	WDH	Medium	72.2	465.3	11.3	No change	No change	Medium	Common	Fair	Fair			1	3
northern red oak	Quercus rubra	WDH	Medium	46.7	378.6	12.3	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	4
bur oak	Quercus macrocarpa	NDH	Medium	51.1	331.7	12.4	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	5
northern pin oak	Quercus ellipsoidalis	NSH	Medium	47.8	306.4	12.9	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	6
American basswood	Tilia americana	WSL	Medium	36.7	302.7	12.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	7
green ash	Fraxinus pennsylvanica	WSH	Low	57.8	283.0	10.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	8
white oak	Quercus alba	WDH	Medium	22.2	181.2	12.1	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	9
red pine	Pinus resinosa	NSH	Medium	20	166.2	18.8	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	10
black cherry	Prunus serotina	WDL	Medium	60	163.5	6.0	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	11
eastern redcedar	Juniperus virginiana	WDH	Medium	33.3	156.4	10.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	12
eastern cottonwood	Populus deltoides	NSH	Low	16.7	145.2	20.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	13
paper birch	Betula papyrifera	WDH	High	42.2	141.7	5.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	14
slippery elm	Ulmus rubra	WSL	Low	45.6	124.4	5.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	15
silver maple	Acer saccharinum	NSH	Low	28.9	121.3	11.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
red maple	Acer rubrum	WDH	High	17.8	110.0	7.7	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	17
white spruce	Picea glauca	NSL	Medium	16.7	85.1	10.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	18
black ash	Fraxinus nigra	WSH	Medium	21.1	83.4	7.1	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	19
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	34.4	79.0	4.2	Sm. inc.	No change	High	Common	Very Good	Good			1	20
balsam fir	Abies balsamea	NDH	High	2.2	65.6	29.5	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	21
hackberry	Celtis occidentalis	WDH	Medium	31.1	64.3	5.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	22
black walnut	Juglans nigra	WDH	Low	16.7	59.9	11.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	23
sugar maple	Acer saccharum	WDH	High	14.4	41.8	8.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	24
eastern white pine	Pinus strobus	WDH	High	16.7	35.0	4.6	Lg. inc.	No change	Low	Rare	Fair	Very Poor	Infill +		1	25
tamarack (native)	Larix laricina	NSH	High	3.3	30.1	9.0	No change	No change	Low	Rare	Very Poor	Very Poor			2	26
black locust	Robinia pseudoacacia	NDH	Low	5.6	26.4	14.2	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	27
bitternut hickory	Carya cordiformis	WSL	Low	17.8	26.2	4.7	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	28
black willow	Salix nigra	NSH	Low	16.7	23.6	5.3	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	29
bigtooth aspen	Populus grandidentata	NSL	Medium	4.4	21.2	4.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	30
black oak	Quercus velutina	WDH	High	1.1	20.7	18.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	31
white ash	Fraxinus americana	WDL	Medium	7.8	14.2	3.8	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	32
jack pine	Pinus banksiana	NSH	Medium	6.7	11.7	5.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	33
Siberian elm	Ulmus pumila	NDH	FIA	10	11.6	8.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	34
chokecherry	Prunus virginiana	NSLX	FIA	12.2	10.7	1.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	35
serviceberry	Amelanchier spp.	NSL	Low	2.2	9.8	4.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	36
Norway spruce	Picea abies	NSH	FIA	1.1	8.6	7.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	37
butternut	Juglans cinerea	NSLX	FIA	16.7	6.0	1.9	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	38
rock elm	Ulmus thomasii	NSLX	FIA	1.1	6.0	5.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	39
Scots pine	Pinus sylvestris	NSH	FIA	2.2	4.8	2.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	40
yellow birch	Betula alleghaniensis	NDL	High	2.2	4.1	1.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	41
black spruce	Picea mariana	NSH	High	1.1	2.4	2.2	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
peachleaf willow	Salix amygdaloides	NSLX	FIA	8.9	1.9	3.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	43
river birch	Betula nigra	NSL	Low	1.1	1.0	0.9	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	44
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	1.1	1.0	0.9	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	45
red mulberry	Morus rubra	NSL	Low	4.4	0.4	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	46
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	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
striped maple	<i>Acer pensylvanicum</i>	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	48
mountain maple	<i>Acer spicatum</i>	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	49
shagbark hickory	<i>Carya ovata</i>	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	50
black hickory	<i>Carya texana</i>	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	51
mockernut hickory	<i>Carya alba</i>	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	52
sugarberry	<i>Celtis laevigata</i>	NDH	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	53
eastern redbud	<i>Cercis canadensis</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	54
honeylocust	<i>Gleditsia triacanthos</i>	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	55
Osage-orange	<i>Maclura pomifera</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	56
sycamore	<i>Platanus occidentalis</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	57
balsam poplar	<i>Populus balsamifera</i>	NSH	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	58
swamp white oak	<i>Quercus bicolor</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	59
shingle oak	<i>Quercus imbricaria</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	60
blackjack oak	<i>Quercus marilandica</i>	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	61
Shumard oak	<i>Quercus shumardii</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	62
post oak	<i>Quercus stellata</i>	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	63
sassafras	<i>Sassafras albidum</i>	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	64