

One x One Degree
Climate Change Atlas Tree Species
 Current and Potential Future Habitat, Capability, and Migration

sq. km sq. mi FIA Plots
 Area of Region 3,424.2 1,322.1 129

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	18	10	Increase	13	10	Very Good	3	3	Likely	0	0
Hickory	0			Medium	17	28	No Change	2	4	Good	7	4	Infill	5	4
Maple	4	Abundant	8	Low	13	11	Decrease	12	13	Fair	7	10	Migrate	6	10
Oak	1	Common	11	FIA	1		New	20	21	Poor	6	5		11	14
Pine	2	Rare	9				Unknown	2	1	Very Poor	3	3			
Other	19	Absent	21							FIA Only	1	1			
	28		49		49	49		49	49	Unknown	1	0			
											28	26			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	43.2	44.8	46.8	47.0	
	CCSM85	43.2	45.4	47.8	50.9	
	GFDL45	43.2	46.3	49.1	50.6	
	GFDL85	43.2	46.4	50.5	55.4	
	HAD45	43.2	46.1	49.0	50.6	
HAD85	43.2	46.4	50.4	55.4		
Growing Season (May—Sep)	CCSM45	59.7	61.6	63.1	63.4	
	CCSM85	59.7	61.8	63.9	67.3	
	GFDL45	59.7	63.2	66.1	67.7	
	GFDL85	59.7	63.0	67.4	72.5	
	HAD45	59.7	62.5	65.0	67.0	
HAD85	59.7	62.4	66.8	71.8		
Coldest Month Average	CCSM45	16.6	17.7	19.2	19.9	
	CCSM85	16.6	19.0	20.4	22.5	
	GFDL45	16.6	19.0	21.5	22.8	
	GFDL85	16.6	20.2	22.8	25.3	
	HAD45	16.6	19.2	21.5	22.3	
HAD85	16.6	20.3	22.7	25.9		
Warmest Month Average	CCSM45	65.9	67.9	68.8	68.8	
	CCSM85	65.9	68.1	69.7	71.2	
	GFDL45	65.9	69.2	70.9	72.1	
	GFDL85	65.9	69.0	71.8	74.6	
	HAD45	65.9	68.9	70.1	71.4	
HAD85	65.9	68.7	71.1	74.2		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	49.3	49.5	47.8	55.5	
	CCSM85	49.3	51.2	50.7	52.6	
	GFDL45	49.3	52.8	56.1	54.2	
	GFDL85	49.3	52.3	54.1	55.3	
	HAD45	49.3	51.8	57.8	55.8	
HAD85	49.3	53.3	54.7	56.8		
Growing Season (May—Sep)	CCSM45	18.8	19.3	17.7	20.2	
	CCSM85	18.8	19.8	19.5	18.8	
	GFDL45	18.8	17.5	17.9	16.9	
	GFDL85	18.8	18.8	17.5	16.1	
	HAD45	18.8	19.4	20.7	20.6	
HAD85	18.8	18.6	20.2	20.8		

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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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
balsam fir	Abies balsamea	NDH	High	92.7	2876.0	15.0	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	1
red maple	Acer rubrum	WDH	High	97.7	1689.8	10.4	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	2
red spruce	Picea rubens	NDH	High	90	1670.0	10.3	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	3
northern white-cedar	Thuja occidentalis	WSH	High	66.5	1119.5	9.5	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	4
eastern white pine	Pinus strobus	WDH	High	78.5	1028.5	7.5	Sm. inc.	No change	Low	Abundant	Good	Fair			1	5
paper birch	Betula papyrifera	WDH	High	88.5	782.1	4.6	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	6
tamarack (native)	Larix laricina	NSH	High	51.9	756.9	9.6	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	7
black spruce	Picea mariana	NSH	High	52	646.3	7.9	Lg. dec.	Lg. dec.	Medium	Abundant	Fair	Fair			0	8
quaking aspen	Populus tremuloides	WDH	High	41.3	381.9	4.3	Sm. inc.	No change	Medium	Common	Good	Fair			1	9
eastern hemlock	Tsuga canadensis	NSH	High	37.4	343.4	4.4	Lg. inc.	Sm. inc.	Low	Common	Good	Fair			1	10
white spruce	Picea glauca	NSL	Medium	53.3	340.2	4.3	No change	No change	Medium	Common	Fair	Fair			1	11
gray birch	Betula populifolia	NSL	Low	69	294.0	3.1	No change	No change	Medium	Common	Fair	Fair			1	12
bigtooth aspen	Populus grandidentata	NSL	Medium	29.9	200.6	3.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
yellow birch	Betula alleghaniensis	NDL	High	48.3	191.8	2.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
red pine	Pinus resinosa	NSH	Medium	23.8	149.4	2.3	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	15
northern red oak	Quercus rubra	WDH	Medium	12.3	140.5	6.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	16
chokecherry	Prunus virginiana	NSLX	FIA	5.5	92.3	3.0	Unknown	Unknown	Medium	Common	FIA Only	FIA Only			0	17
striped maple	Acer pensylvanicum	NSL	Medium	25.6	91.0	1.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	18
American beech	Fagus grandifolia	WDH	High	22.4	79.6	2.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	19
sugar maple	Acer saccharum	WDH	High	17.6	30.4	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	20
mountain maple	Acer spicatum	NSL	Low	12.4	28.1	2.2	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	21
white ash	Fraxinus americana	WDL	Medium	14.6	22.6	1.5	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			1	22
serviceberry	Amelanchier spp.	NSL	Low	19.4	22.4	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	23
pin cherry	Prunus pensylvanica	NSL	Low	14.1	14.5	0.9	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	24
black cherry	Prunus serotina	WDL	Medium	5.9	14.2	0.8	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	25
American mountain-ash	Sorbus americana	NSL	Low	14.6	13.0	0.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	26
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	4.9	6.6	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	27
black ash	Fraxinus nigra	WSH	Medium	2.9	0.9	0.3	Sm. inc.	Lg. dec.	Low	Rare	Poor	Very Poor	Infill +		2	28
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	29
pitch pine	Pinus rigida	NSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	30
sweet birch	Betula lenta	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	31
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	32
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	33
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	34
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	35
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	36
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	37
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	38
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	39
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	40
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	41
white oak	Quercus alba	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	42
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	43
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	44
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	45
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	46
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	47



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sassafras	Sassafras albidum	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3 48
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 49