

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 3,530.0 1,363.0 212

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	Rare	Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85	
Ash	2			High	13	14	Increase	11	13	Very Good	2	2
Hickory	0			Medium	19	27	No Change	6	3	Good	11	11
Maple	3	7		Low	16	9	Decrease	10	11	Fair	7	7
Oak	3	9		FIA	2		New	17	19	Poor	4	4
Pine	3	13					Unknown	6	4	Very Poor	1	0
Other	18	19								FIA Only	2	2
	29	48			50	50		50	50	Unknown	4	2
											31	28

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	37.7	39.2	42.0	42.4	
Average	37.7	40.0	43.3	47.0	
GFDL45	37.7	41.1	43.9	45.7	
GFDL85	37.7	41.2	45.3	50.9	
HAD45	37.7	41.1	44.5	46.6	
HAD85	37.7	41.5	45.7	51.8	
Growing Season	59.0	60.6	63.2	63.5	
May—Sep	59.0	61.7	64.5	68.5	
GFDL45	59.0	63.1	66.6	68.7	
GFDL85	59.0	63.4	67.9	74.0	
HAD45	59.0	62.3	65.0	67.4	
HAD85	59.0	62.2	66.2	72.3	
Coldest Month	2.9	4.4	6.8	6.8	
Average	2.9	3.6	6.2	8.5	
GFDL45	2.9	6.5	8.7	9.6	
GFDL85	2.9	7.7	9.6	13.3	
HAD45	2.9	5.6	9.8	9.5	
HAD85	2.9	8.7	11.9	16.1	
Warmest Month	65.8	67.5	69.2	69.7	
Average	65.8	69.0	71.0	73.5	
GFDL45	65.8	70.2	71.8	73.4	
GFDL85	65.8	70.6	73.0	76.1	
HAD45	65.8	69.3	70.4	72.3	
HAD85	65.8	69.3	71.3	75.4	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	27.4	27.9	28.3	27.3	
Total	27.4	27.1	28.7	27.8	
GFDL45	27.4	29.3	31.1	29.8	
GFDL85	27.4	30.9	31.9	32.2	
HAD45	27.4	28.9	27.2	28.1	
HAD85	27.4	28.2	28.4	29.8	
Growing Season	18.1	18.2	17.8	17.2	
May—Sep	18.1	17.4	17.7	16.6	
GFDL45	18.1	19.4	19.9	19.3	
GFDL85	18.1	20.7	20.6	19.6	
HAD45	18.1	18.2	16.0	16.5	
HAD85	18.1	17.6	16.0	15.6	

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
quaking aspen	Populus tremuloides	WDH	High	97	2724.4	16.3	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
balsam fir	Abies balsamea	NDH	High	94.5	1611.2	9.2	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	2
black spruce	Picea mariana	NSH	High	89.5	1283.4	7.8	Lg. dec.	Lg. dec.	Medium	Abundant	Fair	Fair			0	3
jack pine	Pinus banksiana	NSH	Medium	71.5	1094.5	10.9	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	4
red maple	Acer rubrum	WDH	High	89.1	1062.9	7.4	No change	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
paper birch	Betula papyrifera	WDH	High	97	1018.0	6.3	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	6
eastern white pine	Pinus strobus	WDH	High	82.5	693.2	5.8	No change	No change	Low	Abundant	Fair	Fair			0	7
red pine	Pinus resinosa	NSH	Medium	70.4	470.0	4.7	No change	No change	Low	Common	Poor	Poor			0	8
northern white-cedar	Thuja occidentalis	WSH	High	34.6	442.8	5.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	9
black ash	Fraxinus nigra	WSH	Medium	60.2	441.1	4.3	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
white spruce	Picea glauca	NSL	Medium	84	434.0	2.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	11
tamarack (native)	Larix laricina	NSH	High	39.2	287.1	4.3	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	12
bigtooth aspen	Populus grandidentata	NSL	Medium	56.4	286.9	2.9	No change	No change	Medium	Common	Fair	Fair			1	13
balsam poplar	Populus balsamifera	NSH	Medium	42.2	209.0	2.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	14
American elm	Ulmus americana	WDH	Medium	21.2	63.4	1.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	15
mountain maple	Acer spicatum	NSL	Low	49.2	59.6	1.0	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	16
northern red oak	Quercus rubra	WDH	Medium	38.9	38.4	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	17
northern pin oak	Quercus ellipsoidalis	NSH	Medium	17.7	34.7	1.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	18
green ash	Fraxinus pennsylvanica	WSH	Low	5.7	15.2	2.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	19
yellow birch	Betula alleghaniensis	NDL	High	3	11.3	0.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	20
serviceberry	Amelanchier spp.	NSL	Low	19.4	9.0	0.4	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	21
chokecherry	Prunus virginiana	NSL	FIA	20.4	8.6	0.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	22
American basswood	Tilia americana	WSL	Medium	7.6	6.7	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	23
peachleaf willow	Salix amygdaloides	NSLX	FIA	5.7	4.7	0.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	24
pin cherry	Prunus pensylvanica	NSL	Low	9.2	4.2	0.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	25
American mountain-ash	Sorbus americana	NSL	Low	2.8	2.6	0.9	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			0	26
bur oak	Quercus macrocarpa	NDH	Medium	5.3	2.0	0.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	27
sugar maple	Acer saccharum	WDH	High	3.2	1.8	0.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	28
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	2.4	0.9	0.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	29
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	30
eastern hemlock	Tsuga canadensis	NSH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	31
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	32
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	33
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	34
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	35
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	36
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	37
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	38
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	39
American beech	Fagus grandifolia	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	40
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	41
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	42
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	43
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	44
black cherry	Prunus serotina	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	45
white oak	Quercus alba	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	46
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	47



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black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	48
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	49
slippery elm	Ulmus rubra	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	50