

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 9,813.8 3,789.1 26

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	Scenario	Scenario	Scenario	SHIFT	SHIFT
				High	8	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85
Ash	1			Medium	8	Increase	2	3	Very Good	0	0
Hickory	0			Low	15	No Change	7	6	Good	1	2
Maple	1	Abundant	0	FIA	5	Decrease	4	4	Fair	7	6
Oak	0	Common	5			New	9	9	Poor	3	3
Pine	0	Rare	13			Unknown	12	12	Very Poor	2	2
Other	16	Absent	12						FIA Only	4	4
	18		30		34		34	34	Unknown	7	7
										15	14
										24	24

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	56.8	58.7	60.6	61.1	
Average	56.8	59.3	61.2	64.2	
GFDL45	56.8	63.0	61.8	63.0	
GFDL85	56.8	59.7	62.7	66.9	
HAD45	56.8	59.3	62.1	63.0	
HAD85	56.8	59.6	64.4	67.2	
Growing Season	74.4	76.8	78.9	79.4	
May—Sep	74.4	77.4	79.4	83.0	
GFDL45	74.4	82.9	80.7	82.9	
GFDL85	74.4	78.3	81.9	87.1	
HAD45	74.4	76.4	78.8	79.5	
HAD85	74.4	77.1	82.1	84.4	
Coldest Month	31.1	32.9	34.0	34.8	
Average	31.1	33.3	33.9	35.6	
GFDL45	31.1	34.6	34.8	35.1	
GFDL85	31.1	32.3	33.7	34.5	
HAD45	31.1	32.4	34.6	34.5	
HAD85	31.1	34.6	36.9	38.4	
Warmest Month	81.2	83.7	85.2	85.7	
Average	81.2	84.6	85.8	87.8	
GFDL45	81.2	85.7	86.8	88.6	
GFDL85	81.2	85.9	87.4	91.6	
HAD45	81.2	83.0	84.5	84.8	
HAD85	81.2	84.8	87.0	88.3	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	29.1	28.1	28.4	27.8	
Total	29.1	29.1	29.9	30.2	
GFDL45	29.1	30.7	33.1	31.9	
GFDL85	29.1	31.5	34.5	32.3	
HAD45	29.1	32.4	30.5	32.4	
HAD85	29.1	30.0	27.5	31.2	
Growing Season	17.4	15.2	15.4	15.2	
May—Sep	17.4	16.4	16.5	16.8	
GFDL45	17.4	18.4	19.5	18.8	
GFDL85	17.4	19.2	21.0	19.4	
HAD45	17.4	19.0	19.0	19.2	
HAD85	17.4	17.1	15.5	16.8	

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
eastern redcedar	Juniperus virginiana	WDH	Medium	39.9	80.8	20.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	1
red mulberry	Morus rubra	NSL	Low	29.5	73.7	30.3	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	2
American elm	Ulmus americana	WDH	Medium	33	65.1	20.4	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	3
eastern cottonwood	Populus deltoides	NSH	Low	23.2	52.0	23.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	4
black locust	Robinia pseudoacacia	NDH	Low	7.6	51.5	30.4	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	5
Osage-orange	Maclura pomifera	NDH	Medium	22.4	37.0	7.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	6
Siberian elm	Ulmus pumila	NDH	FIA	11.5	29.6	20.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	7
green ash	Fraxinus pennsylvanica	WDH	Low	24.5	27.2	17.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	8
hackberry	Celtis occidentalis	WDH	Medium	27.8	19.6	7.3	No change	Sm. inc.	High	Rare	Fair	Good	Infill +		2	9
peachleaf willow	Salix amygdaloides	NSLX	FIA	8.2	16.7	32.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	10
northern catalpa	Catalpa speciosa	NSHX	FIA	9.6	12.5	14.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	11
black walnut	Juglans nigra	WDH	Low	13.7	8.6	8.1	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	12
black willow	Salix nigra	NSH	Low	9.6	5.3	6.7	No change	No change	Low	Rare	Very Poor	Very Poor			2	13
honeylocust	Gleditsia triacanthos	NSH	Low	0.1	4.6	0.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	14
rock elm	Ulmus thomasii	NSLX	FIA	4.1	1.4	5.5	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	15
boxelder	Acer negundo	WSH	Low	1.4	1.0	1.3	No change	No change	High	Rare	Fair	Fair			0	16
wild plum	Prunus americana	NSLX	FIA	4.1	0.5	1.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	17
sugarberry	Celtis laevigata	NDH	Medium	0.5	0.3	0.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	18
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	19
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	20
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	21
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	22
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	23
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	24
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	25
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	26
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	27
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	28
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	29
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	30
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	31
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	32
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	33
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	34