

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	9,941.4	3,838.4	37

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	8	Increase	5	6	Very Good	0	0	Likely	2	2
Hickory	0			Medium	10	16	No Change	1	1	Good	5	5	Infill	2	3
Maple	0	Abundant	0	Low	13	3	Decrease	11	10	Fair	0	1	Migrate	3	3
Oak	5	Common	2	FIA	1		New	7	7	Poor	5	5		7	8
Pine	0	Rare	16				Unknown	4	4	Very Poor	7	6			
Other	12	Absent	9							FIA Only	0	0			
	18		27		28	27		28	28	Unknown	3	3			
											20	20			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	59.0	60.9	62.6	63.2	
	CCSM85	59.0	61.4	63.4	66.3	
	GFDL45	59.0	65.2	63.9	65.2	
	GFDL85	59.0	62.0	65.0	69.1	
	HAD45	59.0	61.4	64.0	65.0	
	HAD85	59.0	61.6	66.3	69.1	
Growing Season (May—Sep)	CCSM45	76.3	78.6	80.4	81.0	
	CCSM85	76.3	79.2	81.2	84.7	
	GFDL45	76.3	84.9	82.5	84.9	
	GFDL85	76.3	80.3	83.9	89.2	
	HAD45	76.3	78.4	80.6	81.3	
	HAD85	76.3	79.0	83.9	86.2	
Coldest Month (Average)	CCSM45	33.8	35.9	36.9	37.7	
	CCSM85	33.8	36.1	36.7	38.4	
	GFDL45	33.8	37.4	37.6	37.8	
	GFDL85	33.8	34.9	36.2	37.0	
	HAD45	33.8	34.8	37.1	37.0	
	HAD85	33.8	36.8	38.9	40.6	
Warmest Month (Average)	CCSM45	83.1	85.5	87.0	87.4	
	CCSM85	83.1	86.3	87.3	89.4	
	GFDL45	83.1	88.0	89.0	90.9	
	GFDL85	83.1	88.0	89.8	94.2	
	HAD45	83.1	84.9	86.4	86.7	
	HAD85	83.1	86.4	88.6	89.8	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	29.6	28.7	29.7	29.0	
	CCSM85	29.6	29.4	30.8	30.7	
	GFDL45	29.6	31.1	34.1	32.0	
	GFDL85	29.6	31.8	34.3	32.7	
	HAD45	29.6	32.0	31.1	32.6	
	HAD85	29.6	30.2	27.0	31.5	
Growing Season (May—Sep)	CCSM45	16.7	14.8	15.3	15.3	
	CCSM85	16.7	16.1	16.3	16.1	
	GFDL45	16.7	17.6	19.4	18.1	
	GFDL85	16.7	18.7	20.2	18.8	
	HAD45	16.7	17.8	18.2	18.2	
	HAD85	16.7	16.1	14.2	16.3	

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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USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

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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	39.2	214.7	35.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
American elm	Ulmus americana	WDH	Medium	30.5	71.9	29.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	2
eastern cottonwood	Populus deltoides	NSH	Low	20.5	46.7	25.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	3
black locust	Robinia pseudoacacia	NDH	Low	11.8	46.7	60.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	4
black willow	Salix nigra	NSH	Low	13.8	31.9	17.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	5
Osage-orange	Maclura pomifera	NDH	Medium	17.9	25.0	15.9	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	6
blackjack oak	Quercus marilandica	NSL	Medium	14.6	17.2	11.8	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	7
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	17.7	15.1	11.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	8
bur oak	Quercus macrocarpa	NDH	Medium	2.2	9.0	4.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	9
post oak	Quercus stellata	WDH	High	6.5	6.6	5.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	10
hackberry	Celtis occidentalis	WDH	Medium	10.6	4.5	5.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	11
Siberian elm	Ulmus pumila	NDH	FIA	4.6	4.1	2.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	12
red mulberry	Morus rubra	NSL	Low	4.4	2.7	4.4	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	13
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.2	1.6	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	14
winged elm	Ulmus alata	WDL	Medium	3.5	1.4	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	15
black oak	Quercus velutina	WDH	High	4	1.4	5.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			0	16
sugarberry	Celtis laevigata	NDH	Medium	7.6	1.1	2.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	17
green ash	Fraxinus pennsylvanica	WSH	Low	6.6	0.7	1.0	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	18
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	19
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	20
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	22
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	23
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	24
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	25
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	26
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	27
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	28