S28 E96

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

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Northern Research Station
Landscape Change Research Group
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	sq. km	sq. mi	FIA Plots
Area of Region	5,921.0	2,286.1	16

Species Information

The columns below provide breif 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 Reliability	Adaptability	Potential Change in Habitat Suitability			Capability to Cope or Persist			Migration Potential		
								Scenario RCP45	Scenario RCP85		Scenario RCP45	Scenario RCP85		SHIFT RCP45	SHIFT RCP85
Ash	2														
Hickory	2														
Maple	1		Abundant	0	High	5	8	Increase	2	2	Very Good	0	0	Likely	1	1
Oak	4		Common	3	Medium	11	12	No Change	5	6	Good	1	1	Infill	8	8
Pine	0		Rare	15	Low	10	6	Decrease	11	10	Fair	5	5	Migrate	0	0
Other	9		Absent	7	FIA	0		New	1	1	Poor	5	5		**9**	**9**
	18		**25**			**26**	**26**	Unknown	7	7	Very Poor	7	7			
									26	**26**	FIA Only	0	0			
											Unknown	7	7			
												25	**25**			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	70.6	72.0	73.3	73.6	
Average	CCSM85	70.6	72.1	74.3	76.3	
	GFDL45	70.6	75.9	74.7	75.9	
	GFDL85	70.6	73.0	76.1	79.3	
	HAD45	70.6	72.5	74.7	75.8	
	HAD85	70.6	72.8	75.6	78.7	
Growing	CCSM45	81.5	82.6	83.6	84.0	
Season	CCSM85	81.5	82.8	84.7	86.8	
May—Sep	GFDL45	81.5	87.8	86.0	87.8	
	GFDL85	81.5	84.4	87.7	91.4	
	HAD45	81.5	83.3	85.1	85.9	
	HAD85	81.5	83.6	86.5	89.1	
Coldest	CCSM45	53.0	55.1	56.0	56.1	
Month	CCSM85	53.0	55.2	56.3	57.6	
Average	GFDL45	53.0	56.3	56.4	56.6	
	GFDL85	53.0	54.2	55.6	56.2	
	HAD45	53.0	54.0	55.5	56.2	
	HAD85	53.0	56.1	57.4	59.0	
Warmest	CCSM45	84.6	85.6	86.1	86.2	
Month	CCSM85	84.6	85.9	86.6	87.6	
Average	GFDL45	84.6	87.9	88.6	89.4	
	GFDL85	84.6	88.2	89.7	91.8	
	HAD45	84.6	86.5	87.2	87.8	
	HAD85	84.6	86.8	88.2	89.3	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	41.9	45.9	48.5	45.5	
Total	CCSM85	41.9	46.1	45.7	43.3	
	GFDL45	41.9	42.8	50.3	39.3	
	GFDL85	41.9	42.0	42.9	41.8	
	HAD45	41.9	43.2	41.2	43.0	
	HAD85	41.9	45.3	41.6	43.0	
Growing	CCSM45	20.4	23.7	24.4	22.1	
Season	CCSM85	20.4	23.9	22.3	19.8	
May—Sep	GFDL45	20.4	21.7	28.3	20.3	
	GFDL85	20.4	22.0	22.2	22.3	
	HAD45	20.4	19.7	19.6	21.4	
	HAD85	20.4	22.0	20.4	20.6	

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
live oak	Quercus virginiana	NDH	High	43.7	151.4	28.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	1
sugarberry	Celtis laevigata	NDH	Medium	25.9	113.3	24.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	2
hackberry	Celtis occidentalis	WDH	Medium	14	54.7	27.5	Lg. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	3
pecan	Carya illinoinensis	NSH	Low	7.1	45.8	29.4	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	4
water oak	Quercus nigra	WDH	High	13.9	36.6	15.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	5
cedar elm	Ulmus crassifolia	NDH	Medium	23.2	35.7	11.2	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor	Infill +	Infill +	1	6
post oak	Quercus stellata	WDH	High	9.7	9.9	9.9	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	7
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	15	5.4	2.9	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	8
green ash	Fraxinus pennsylvanica	WSH	Low	5.3	3.8	6.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	9
white ash	Fraxinus americana	WDL	Medium	3.3	3.2	3.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	10
black willow	Salix nigra	NSH	Low	3.3	3.2	3.6	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	11
black cherry	Prunus serotina	WDL	Medium	4.2	2.1	3.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	12
boxelder	Acer negundo	WSH	Low	3.3	1.9	2.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	13
sycamore	Platanus occidentalis	NSL	Low	3.3	1.7	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	14
black hickory	Carya texana	NDL	High	6.5	1.4	3.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	15
honeylocust	Gleditsia triacanthos	NSH	Low	3.3	1.1	1.3	No change	No change	High	Rare	Fair	Fair			0	16
Osage-orange	Maclura pomifera	NDH	Medium	3.3	0.6	0.7	No change	No change	High	Rare	Fair	Fair			0	17
blackjack oak	Quercus marilandica	NSL	Medium	3.3	0.4	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	18
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	19
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	20
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	22
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	23
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24
black oak	Quercus velutina	WDH	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	25
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	26

Sep 2022