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

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

	sq. km	sq. mi	FIA Plots
Area of Region	6,719.3	2,594.3	

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
Ash	0
Hickory	0
Maple	0
Oak	0
Pine	0
Other	0
	0

Abundance	
Abundant	0
Common	0
Rare	0
Absent	4
	4

	Model Reliability	Adaptability
High	1	0
Medium	1	4
Low	2	0
FIA	0	
	4	**4**

Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85
Increase	0	0
No Change	0	0
Decrease	0	0
New	1	1
Unknown	3	3
	4	**4**

Capability to Cope or Persist	Scenario RCP45	Scenario RCP85
Very Good	0	0
Good	0	0
Fair	0	0
Poor	0	0
Very Poor	0	0
FIA Only	0	0
Unknown	3	3
	3	**3**

Migration Potential	SHIFT RCP45	SHIFT RCP85
Likely	0	0
Infill	0	0
Migrate	0	0
	0	**0**

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	73.1	74.4	76.0	76.8
	CCSM85	73.1	75.0	77.2	79.8
	GFDL45	73.1	78.5	77.7	79.4
	GFDL85	73.1	75.9	79.4	83.1
	HAD45	73.1	75.1	77.6	78.4
	HAD85	73.1	75.7	78.4	82.0
Growing Season May—Sep	CCSM45	84.5	85.8	87.2	87.8
	CCSM85	84.5	86.4	88.5	91.2
	GFDL45	84.5	91.2	90.2	92.3
	GFDL85	84.5	88.2	92.1	96.5
	HAD45	84.5	86.7	88.9	89.6
	HAD85	84.5	87.1	90.1	93.7
Coldest Month Average	CCSM45	54.3	56.7	57.4	57.9
	CCSM85	54.3	56.4	57.6	59.0
	GFDL45	54.3	57.4	57.7	57.6
	GFDL85	54.3	55.5	56.6	57.3
	HAD45	54.3	55.6	56.7	57.3
	HAD85	54.3	57.6	58.9	60.5
Warmest Month Average	CCSM45	87.9	89.2	90.0	90.2
	CCSM85	87.9	90.0	90.7	91.9
	GFDL45	87.9	92.2	93.1	94.0
	GFDL85	87.9	92.3	93.9	96.5
	HAD45	87.9	90.4	91.3	91.9
	HAD85	87.9	90.8	92.5	94.1

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	20.1	23.3	22.0	20.1
	CCSM85	20.1	22.4	22.4	21.9
	GFDL45	20.1	18.2	20.8	14.9
	GFDL85	20.1	18.5	17.7	16.0
	HAD45	20.1	21.6	20.1	23.6
	HAD85	20.1	21.4	22.9	22.9
Growing Season May—Sep	CCSM45	11.5	12.9	12.4	11.8
	CCSM85	11.5	13.6	12.7	12.7
	GFDL45	11.5	10.3	12.5	8.5
	GFDL85	11.5	10.8	10.0	8.9
	HAD45	11.5	11.5	10.9	13.0
	HAD85	11.5	12.3	11.9	12.0

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
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	1
water hickory	Carya aquatica	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	2
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	3
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	4