

HUC 111202 Salt Fork Red

HUC 6 Watershed

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 5,148.8 1,988.0 5

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	Common	Rare	FIA	Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85				
Ash	0					High	3	5	Increase	2	2	Very Good	0	0	Likely	2	2
Hickory	0					Medium	6	8	No Change	0	0	Good	1	1	Infill	1	1
Maple	0	Abundant	0			Low	6	2	Decrease	5	5	Fair	1	1	Migrate	3	4
Oak	0	Common	1			FIA	1		New	7	7	Poor	2	2			
Pine	0	Rare	7						Unknown	2	2	Very Poor	2	2			
Other	8	Absent	8									FIA Only	0	0			
	8		16				16	15		16	16	Unknown	1	1			
													7	7			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	42.4	43.0	43.5	43.8	
Average	CCSM85	42.4	43.2	43.8	44.9	
	GFDL45	42.4	44.6	44.0	44.6	
	GFDL85	42.4	43.5	44.5	46.0	
	HAD45	42.4	43.2	44.1	44.5	
	HAD85	42.4	43.3	44.8	45.9	
Growing Season	CCSM45	48.1	48.7	49.4	49.6	
	CCSM85	48.1	49.0	49.6	50.9	
May—Sep	GFDL45	48.1	51.1	50.2	51.1	
	GFDL85	48.1	49.6	50.9	52.8	
	HAD45	48.1	48.8	49.6	49.8	
	HAD85	48.1	49.0	50.6	51.5	
Coldest Month	CCSM45	34.1	34.8	35.0	35.4	
	CCSM85	34.1	34.9	35.1	35.7	
Average	GFDL45	34.1	35.2	35.2	35.3	
	GFDL85	34.1	34.4	34.8	35.1	
	HAD45	34.1	34.4	35.2	35.2	
	HAD85	34.1	35.2	35.9	36.4	
Warmest Month	CCSM45	50.3	51.0	51.5	51.6	
	CCSM85	50.3	51.3	51.5	52.3	
Average	GFDL45	50.3	52.2	52.4	53.2	
	GFDL85	50.3	52.3	53.0	54.6	
	HAD45	50.3	50.9	51.4	51.4	
	HAD85	50.3	51.3	52.1	52.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	9.5	10.0	9.8	9.3	
Total	CCSM85	9.5	9.4	10.2	9.6	
	GFDL45	9.5	9.7	11.1	9.6	
	GFDL85	9.5	9.7	10.4	9.6	
	HAD45	9.5	10.6	9.9	10.2	
	HAD85	9.5	9.8	8.6	10.1	
Growing Season	CCSM45	5.4	5.3	5.1	5.0	
	CCSM85	5.4	5.3	5.4	5.0	
May—Sep	GFDL45	5.4	5.4	6.4	5.4	
	GFDL85	5.4	5.8	6.0	5.4	
	HAD45	5.4	6.0	5.7	5.8	
	HAD85	5.4	5.2	4.4	5.4	

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.

Cite as: Iverson, L.R.; Prasad, A.M.; Peters, M.P.; Matthews, S.N. 2019. Facilitating Adaptive Forest Management under Climate Change: A Spatially Specific Synthesis of 125 Species for Habitat Changes and Assisted Migration over the Eastern United States. *Forests*. 10(11): 989. <https://doi.org/10.3390/f10110989>.

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
black willow	Salix nigra	NSH	Low	41.2	85.1	24.9	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	1
eastern cottonwood	Populus deltoides	NSH	Low	14.4	24.3	33.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	2
Osage-orange	Maclura pomifera	NDH	Medium	3.5	14.4	4.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	3
honeylocust	Gleditsia triacanthos	NSH	Low	3.5	9.4	3.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	4
Siberian elm	Ulmus pumila	NDH	FIA	3.5	9.3	3.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
red mulberry	Morus rubra	NSL	Low	3.5	8.4	2.8	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	6
eastern redcedar	Juniperus virginiana	WDH	Medium	9.4	2.1	1.9	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	7
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	9.4	0.3	0.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	8
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	9
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	10
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	11
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	12
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	13
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	14
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	15
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	16