

HUC 130900 Lower Rio Grande

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 13,647 5,269.2

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	0											
Hickory	0											
Maple	0	Abundant	0	High	2	4	Increase	0	0	Very Good	0	0
Oak	0	Common	0	Medium	10	16	No Change	2	2	Good	0	0
Pine	0	Rare	2	Low	10	2	Decrease	0	0	Fair	0	0
Other	2	Absent	20	FIA	0		New	14	14	Poor	1	1
	2		22		22	22	Unknown	6	6	Very Poor	1	1
								22	22	FIA Only	0	0
										Unknown	6	6
											8	8

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	44.0	44.4	44.9	45.0	
Average	CCSM85	44.0	44.5	45.2	45.9	
	GFDL45	44.0	45.7	45.3	45.7	
	GFDL85	44.0	44.8	45.7	46.7	
	HAD45	44.0	44.6	45.2	45.5	
	HAD85	44.0	44.7	45.5	46.4	
Growing Season	CCSM45	47.0	47.3	47.7	47.8	
	CCSM85	47.0	47.5	48.1	48.8	
May—Sep	GFDL45	47.0	49.0	48.5	49.0	
	GFDL85	47.0	47.9	48.9	50.1	
	HAD45	47.0	47.5	48.1	48.3	
	HAD85	47.0	47.7	48.4	49.4	
Coldest Month	CCSM45	39.0	39.5	39.8	39.9	
	CCSM85	39.0	39.6	39.9	40.3	
Average	GFDL45	39.0	39.8	40.0	40.0	
	GFDL85	39.0	39.4	39.7	40.0	
	HAD45	39.0	39.3	39.6	39.9	
	HAD85	39.0	40.0	40.3	40.8	
Warmest Month	CCSM45	47.8	48.2	48.4	48.4	
	CCSM85	47.8	48.4	48.5	48.9	
Average	GFDL45	47.8	48.8	49.1	49.3	
	GFDL85	47.8	48.8	49.3	49.9	
	HAD45	47.8	48.4	48.6	48.8	
	HAD85	47.8	48.5	48.9	49.4	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	6.1	6.6	6.3	6.0	
Total	CCSM85	6.1	6.4	6.4	5.9	
	GFDL45	6.1	5.8	6.4	4.9	
	GFDL85	6.1	5.8	5.6	5.2	
	HAD45	6.1	6.2	6.1	6.8	
	HAD85	6.1	6.4	6.6	6.6	
Growing Season	CCSM45	3.6	3.8	3.7	3.6	
Season	CCSM85	3.6	4.0	3.8	3.5	
May—Sep	GFDL45	3.6	3.5	4.1	3.0	
	GFDL85	3.6	3.6	3.4	3.2	
	HAD45	3.6	3.4	3.3	3.9	
	HAD85	3.6	4.0	3.6	3.4	

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.

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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	0.2	2.0	0.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	1
sugarberry	Celtis laevigata	NDH	Medium	0.2	1.8	0.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	3
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	4
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	5
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	6
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	7
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	8
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	9
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	10
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	11
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	12
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	13
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	14
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	15
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	16
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	17
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	18
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	19
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	20
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	21
slippery elm	Ulmus rubra	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	22