Sam Houston

	sq. km	sq. mi	FIA Plots
Area of Region	8,200.0	3,166.0	281

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			Model			Potential Change in Habitat Suitability			Capability to Cope or Persist			Migration Potential		
								Scenario	Scenario			Scenario	Scenario		SHIFT	SHIFT
Ash	2			Model				RCP45	RCP85			RCP45	RCP85		RCP45	RCP85
Hickory	7	Abundance		Reliability	Adaptability											
Maple	3	Abundant	4	High	12	20	Increase	18	21	Very Good	8	8	Likely	1	2
Oak	13	Common	17	Medium	31	46	No Change	21	24	Good	9	13	Infill	13	15
Pine	4	Rare	42	Low	32	9	Decrease	23	17	Fair	11	9	Migrate	1	1
Other	34	Absent	12	FIA	1		New	2	3	Poor	17	20		15	18
	63		75		76	75	Unknown	12	11	Very Poor	16	10			
								76	76	FIA Only	0	0			
										Unknown	11	10			
											72	70			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	67.5	69.2	70.4	70.8	
Average	CCSM85	67.5	69.6	71.9	74.1	
	GFDL45	67.5	70.2	71.5	72.8	
	GFDL85	67.5	70.0	73.0	76.3	
	HAD45	67.5	69.6	72.2	73.1	
	HAD85	67.5	69.9	73.3	76.7	
Growing	CCSM45	79.8	81.3	82.1	82.6	
Season	CCSM85	79.8	81.8	83.9	86.5	
May—Sep	GFDL45	79.8	82.9	84.2	86.5	
	GFDL85	79.8	82.9	86.2	90.2	
	HAD45	79.8	82.2	84.5	85.1	
	HAD85	79.8	82.6	86.4	89.2	
Coldest	CCSM45	48.4	51.0	51.7	51.8	
Month	CCSM85	48.4	51.1	52.2	53.5	
Average	GFDL45	48.4	51.9	52.1	52.0	
	GFDL85	48.4	49.4	50.5	51.0	
	HAD45	48.4	49.0	50.7	51.4	
	HAD85	48.4	50.9	52.3	54.1	
Warmest	CCSM45	83.8	84.9	85.3	85.5	
Month	CCSM85	83.8	85.7	86.3	87.6	
Average	GFDL45	83.8	87.7	87.9	89.4	
	GFDL85	83.8	87.7	89.2	91.8	
	HAD45	83.8	86.6	87.5	87.7	
	HAD85	83.8	87.0	89.0	89.9	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	48.8	48.5	55.4	52.5	
Total	CCSM85	48.8	50.1	53.8	53.3	
	GFDL45	48.8	50.1	58.6	48.8	
	GFDL85	48.8	49.1	51.6	50.2	
	HAD45	48.8	49.8	47.0	50.9	
	HAD85	48.8	51.5	44.9	47.4	
Growing	CCSM45	20.5	21.5	23.9	21.8	
Season	CCSM85	20.5	20.7	21.5	19.8	
May—Sep	GFDL45	20.5	22.2	28.5	21.7	
	GFDL85	20.5	22.2	23.7	23.9	
	HAD45	20.5	20.0	19.2	21.1	
	HAD85	20.5	20.7	17.7	17.9	

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
loblolly pine	Pinus taeda	WDH	High	95.1	4235.5	44.5	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
sweetgum	Liquidambar styraciflua	WDH	High	80.5	917.7	11.4	No change	No change	Medium	Abundant	Good	Good			1	2
water oak	Quercus nigra	WDH	High	89	898.6	10.1	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	3
post oak	Quercus stellata	WDH	High	57.3	544.0	9.5	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	4
winged elm	Ulmus alata	WDL	Medium	73.2	444.9	6.1	No change	No change	Medium	Common	Fair	Fair			1	5
southern red oak	Quercus falcata	WDL	Medium	69.5	305.5	4.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	6
shortleaf pine	Pinus echinata	WDH	High	40.2	273.3	6.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	7
white oak	Quercus alba	WDH	Medium	40.2	181.9	4.5	Sm. dec.	No change	High	Common	Fair	Good			1	8
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	32.9	154.7	4.7	No change	No change	Medium	Common	Fair	Fair			1	9
sugarberry	Celtis laevigata	NDH	Medium	30.5	125.7	4.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	10
pecan	Carya illinoinensis	NSH	Low	7.3	121.8	16.7	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	11
blackgum	Nyssa sylvatica	WDL	Medium	48.8	120.5	2.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	29.3	103.2	3.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
willow oak	Quercus phellos	NSL	Low	20.7	95.1	4.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	36.6	78.8	2.2	No change	No change	High	Common	Good	Good			1	15
green ash	Fraxinus pennsylvanica	WSH	Low	26.8	77.0	2.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
American elm	Ulmus americana	WDH	Medium	30.5	76.1	2.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
American holly	Ilex opaca	NSL	Medium	32.9	71.3	2.2	No change	No change	Medium	Common	Fair	Fair			1	18
white ash	Fraxinus americana	WDL	Medium	29.3	62.2	2.1	No change	No change	Low	Common	Poor	Poor			0	19
laurel oak	Quercus laurifolia	NDH	Medium	17.1	55.6	3.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
red maple	Acer rubrum	WDH	High	28	52.6	1.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	21
water tupelo	Nyssa aquatica	NSH	Medium	1.2	46.8	38.4	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	22
sassafras	Sassafras albidum	WSL	Low	17.1	43.6	2.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	23
honeylocust	Gleditsia triacanthos	NSH	Low	9.8	42.7	4.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	24
swamp chestnut oak	Quercus michauxii	NSL	Low	9.8	42.2	4.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	25
slippery elm	Ulmus rubra	WSL	Low	12.2	42.1	3.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	26
eastern redcedar	Juniperus virginiana	WDH	Medium	17.1	38.0	2.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	27
black willow	Salix nigra	NSH	Low	3.7	36.6	10.0	No change	No change	Low	Rare	Very Poor	Very Poor			2	28
southern magnolia	Magnolia grandiflora	NSL	Low	12.2	35.0	2.9	No change	No change	Medium	Rare	Poor	Poor			1	29
mockernut hickory	Carya alba	WDL	Medium	12.2	27.6	2.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	30
black hickory	Carya texana	NDL	High	20.7	25.8	1.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	31
sweetbay	Magnolia virginiana	NSL	Medium	4.9	24.7	5.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	32
Nuttall oak	Quercus texana	NSH	Medium	3.7	22.9	6.3	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	33
black cherry	Prunus serotina	WDL	Medium	23.2	21.2	0.9	No change	Sm. inc.	Low	Rare	Very Poor	Poor			1	34
blackjack oak	Quercus marilandica	NSL	Medium	4.9	20.7	4.3	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	35
Osage-orange	Maclura pomifera	NDH	Medium	7.3	20.1	2.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	36
American beech	Fagus grandifolia	WDH	High	3.7	19.8	5.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	37
slash pine	Pinus elliottii	NDH	High	7.3	18.2	2.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	38
boxelder	Acer negundo	WSH	Low	4.9	13.7	2.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	39
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	6.1	13.7	2.3	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	40
water hickory	Carya aquatica	NSL	Medium	7.3	13.2	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	41
redbay	Persea borbonia	NSL	Low	8.5	11.8	1.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	42
cedar elm	Ulmus crassifolia	NDH	Medium	4.9	11.7	2.4	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	43
bald cypress	Taxodium distichum	NSH	Medium	1.2	11.7	9.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	44
sycamore	Platanus occidentalis	NSL	Low	3.7	11.3	3.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	45
flowering dogwood	Cornus florida	WDL	Medium	13.4	11.0	0.8	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	46
red mulberry	Morus rubra	NSL	Low	8.5	10.5	1.2	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
common persimmon	Diospyros virginiana	NSL	Low	9.8	10.2	1.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	48
overcup oak	Quercus lyrata	NSL	Medium	2.4	9.8	4.0	No change	No change	Low	Rare	Very Poor	Very Poor			2	49
American basswood	Tilia americana	WSL	Medium	6.1	8.6	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50
longleaf pine	Pinus palustris	NSH	Medium	2.4	6.5	2.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			2	51
Shumard oak	Quercus shumardii	NSL	Low	3.7	5.7	1.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	52
black walnut	Juglans nigra	WDH	Low	4.9	5.4	1.1	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	53
pignut hickory	Carya glabra	WDL	Medium	2.4	5.2	2.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	54
eastern redbud	Cercis canadensis	NSL	Low	6.1	4.0	0.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
river birch	Betula nigra	NSL	Low	2.4	3.8	1.6	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	56
bitternut hickory	Carya cordiformis	WSL	Low	3.7	3.2	0.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	57
black oak	Quercus velutina	WDH	High	1.2	1.9	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	58
water elm	Planera aquatica	NSL	Low	1.2	1.8	1.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	59
white mulberry	Morus alba	NSL	FIA	1.2	0.9	0.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	60
shagbark hickory	Carya ovata	WSL	Medium	2.4	0.7	0.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	61
pawpaw	Asimina triloba	NSL	Low	1.2	0.7	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	62
florida maple	Acer barbatum	NSL	Low	1.2	0.2	0.2	Lg. dec.	No change	High	Rare	Poor	Fair			0	63
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	64
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	65
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	66
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	67
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	68
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	69
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	70
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	71
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	72
northern red oak	Quercus rubra	WDH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	73
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	74
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Likely +	3	75
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	76