

HUC 030502 Edisto-South Carolina Coastal

HUC 6 Watershed Climate Change Atlas Tree Species

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

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	21,486	8,295.7	581

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	Scenario	Scenario	Scenario	SHIFT	SHIFT			
				High	Low	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85			
Ash	3			16	22	Increase	30	33	Very Good	10	11	Likely	4	4
Hickory	6			36	56	No Change	16	18	Good	14	22	Infill	23	24
Maple	2	Abundant	3	37	12	Decrease	24	19	Fair	17	8	Migrate	1	2
Oak	18	Common	20	5		New	9	10	Poor	10	13			
Pine	7	Rare	52			Unknown	15	14	Very Poor	18	15			
Other	39	Absent	18						FIA Only	4	4			
	75		93				94	94	Unknown	10	9			
										83	82			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	58.3	59.5	61.1	61.1	
Average	58.3	59.7	61.6	63.7	
GFDL45	58.3	60.3	61.9	62.6	
GFDL85	58.3	60.3	62.8	65.6	
HAD45	58.3	59.8	61.8	63.0	
HAD85	58.3	60.1	62.7	65.7	
Growing Season	68.5	69.6	70.8	71.2	
May—Sep	68.5	70.5	72.1	73.2	
GFDL45	68.5	70.7	73.2	76.3	
GFDL85	68.5	70.6	72.3	73.6	
HAD45	68.5	70.6	72.3	73.6	
HAD85	68.5	70.5	74.2	77.0	
Coldest Month	42.9	44.8	45.4	45.3	
Average	42.9	44.6	45.5	45.9	
GFDL45	42.9	45.2	45.5	46.0	
GFDL85	42.9	44.6	45.4	46.0	
HAD45	42.9	43.2	44.4	44.9	
HAD85	42.9	43.8	44.5	45.8	
Warmest Month	71.9	73.1	73.8	73.9	
Average	71.9	73.3	74.4	75.7	
GFDL45	71.9	73.5	74.2	74.9	
GFDL85	71.9	73.8	75.1	76.8	
HAD45	71.9	74.3	75.2	75.7	
HAD85	71.9	74.5	76.7	78.0	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	37.9	40.8	42.8	43.5	
Total	37.9	40.9	43.5	46.8	
GFDL45	37.9	42.9	45.4	47.3	
GFDL85	37.9	42.1	47.3	46.8	
HAD45	37.9	37.6	38.8	39.6	
HAD85	37.9	39.9	36.6	37.3	
Growing Season	19.0	22.0	23.3	23.1	
May—Sep	19.0	23.6	25.2	25.9	
GFDL45	19.0	22.7	26.9	27.2	
GFDL85	19.0	19.0	19.1	18.6	
HAD45	19.0	19.0	19.1	18.6	
HAD85	19.0	19.8	16.6	15.8	

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	93.6	4118.1	38.8	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
sweetgum	Liquidambar styraciflua	WDH	High	86.9	1029.9	10.8	No change	No change	Medium	Abundant	Good	Good			1	2
water oak	Quercus nigra	WDH	High	84.6	735.2	7.9	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	3
red maple	Acer rubrum	WDH	High	72.2	415.5	5.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	4
longleaf pine	Pinus palustris	NSH	Medium	26.1	399.1	10.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	5
swamp tupelo	Nyssa biflora	NDH	Medium	57.3	374.2	5.9	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	6
laurel oak	Quercus laurifolia	NDH	Medium	60.2	298.3	5.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	7
black cherry	Prunus serotina	WDL	Medium	44.4	127.0	2.6	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	8
live oak	Quercus virginiana	NDH	High	24	125.6	5.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	9
turkey oak	Quercus laevis	NSH	Medium	10	92.0	6.7	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	10
redbay	Persea borbonia	NSL	Low	40.2	90.3	2.3	Sm. dec.	No change	High	Common	Fair	Good			1	11
slash pine	Pinus elliotii	NDH	High	11.9	89.5	5.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	12
mockernut hickory	Carya alba	WDL	Medium	28.5	84.5	2.9	No change	Sm. inc.	High	Common	Good	Very Good			1	13
blackgum	Nyssa sylvatica	WDL	Medium	33.5	84.0	2.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	14
yellow-poplar	Liriodendron tulipifera	WDH	High	23.2	82.9	3.4	No change	No change	High	Common	Good	Good			1	15
southern red oak	Quercus falcata	WDL	Medium	21.5	80.8	2.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	16
willow oak	Quercus phellos	NSL	Low	27.9	77.9	2.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	17
pond pine	Pinus serotina	NSH	Medium	14.5	72.7	4.7	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	18
water tupelo	Nyssa aquatica	NSH	Medium	7.2	66.6	8.5	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	19
pond cypress	Taxodium ascendens	NSH	Medium	9.2	62.4	3.7	No change	Sm. inc.	Medium	Common	Fair	Good	Infill +	Infill ++	1	20
bald cypress	Taxodium distichum	NSH	Medium	16.2	59.0	3.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	21
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	20.1	55.7	2.8	No change	No change	Medium	Common	Fair	Fair			1	22
post oak	Quercus stellata	WDH	High	21.6	51.1	1.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	23
green ash	Fraxinus pennsylvanica	WSH	Low	20	48.6	2.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	24
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	15.9	40.4	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	25
American holly	Ilex opaca	NSL	Medium	20.4	38.8	1.3	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	26
sand hickory	Carya pallida	NSL	FIA	7	34.9	3.8	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	27
bluejack oak	Quercus incana	NSL	Low	4.6	33.8	4.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	28
common persimmon	Diospyros virginiana	NSL	Low	14.7	30.6	1.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	29
black willow	Salix nigra	NSH	Low	8.5	26.4	3.0	No change	No change	Low	Rare	Very Poor	Very Poor			0	30
white oak	Quercus alba	WDH	Medium	14.1	26.0	1.5	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	31
blackjack oak	Quercus marilandica	NSL	Medium	8.8	24.8	2.0	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	32
slippery elm	Ulmus rubra	WSL	Low	11.8	21.2	1.7	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	33
sweetbay	Magnolia virginiana	NSL	Medium	14	21.1	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	34
shortleaf pine	Pinus echinata	WDH	High	3.6	20.0	2.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	35
swamp chestnut oak	Quercus michauxii	NSL	Low	15.3	19.9	1.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	36
American elm	Ulmus americana	WDH	Medium	12.9	19.2	1.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	37
flowering dogwood	Cornus florida	WDL	Medium	10.8	17.9	0.9	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	38
pignut hickory	Carya glabra	WDL	Medium	9.3	16.5	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	39
loblolly-bay	Gordonia lasianthus	NSH	Medium	3.9	16.0	3.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	40
spruce pine	Pinus glabra	NSL	Low	7.3	13.2	2.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
sassafras	Sassafras albidum	WSL	Low	10.2	12.2	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	42
river birch	Betula nigra	NSL	Low	3.1	11.5	4.1	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	43
scarlet oak	Quercus coccinea	WDL	Medium	4.7	10.3	2.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
sugarberry	Celtis laevigata	NDH	Medium	5.7	9.0	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	45
water hickory	Carya aquatica	NSL	Medium	2.7	8.5	2.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	46
sycamore	Platanus occidentalis	NSL	Low	1.8	8.0	3.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	47



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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
winged elm	Ulmus alata	WDL	Medium	4	7.3	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	48
eastern redcedar	Juniperus virginiana	WDH	Medium	6.1	6.9	1.1	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	49
southern magnolia	Magnolia grandiflora	NSL	Low	6	6.5	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	50
black oak	Quercus velutina	WDH	High	4.9	6.0	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	51
overcup oak	Quercus lyrata	NSL	Medium	4.4	5.2	1.9	No change	No change	Low	Rare	Very Poor	Very Poor			2	52
water elm	Planera aquatica	NSL	Low	1.6	4.3	2.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	53
boxelder	Acer negundo	WSH	Low	3	3.4	1.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	54
pecan	Carya illinoensis	NSH	Low	2.6	3.3	2.3	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	55
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	3.6	3.3	0.8	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	56
cabbage palmetto	Sabal palmetto	NDH	Medium	4.7	3.2	2.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			0	57
red mulberry	Morus rubra	NSL	Low	3.1	3.1	0.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	58
eastern cottonwood	Populus deltoides	NSH	Low	0.9	2.9	1.2	Sm. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	59
hackberry	Celtis occidentalis	WDH	Medium	1	2.0	2.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	60
American beech	Fagus grandifolia	WDH	High	2.6	1.8	0.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	61
sourwood	Oxydendrum arboreum	NDL	High	1.3	1.8	0.7	No change	No change	High	Rare	Fair	Fair	Infill +		2	62
Virginia pine	Pinus virginiana	NDH	High	1.8	1.7	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	63
Carolina ash	Fraxinus caroliniana	NSL	FIA	0.5	1.1	2.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	64
shagbark hickory	Carya ovata	WSL	Medium	0.5	0.9	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	65
pumpkin ash	Fraxinus profunda	NSH	FIA	0.5	0.5	1.1	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	66
northern red oak	Quercus rubra	WDH	Medium	0.5	0.5	1.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	67
Shumard oak	Quercus shumardii	NSL	Low	2.4	0.3	1.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	68
wild plum	Prunus americana	NSLX	FIA	1	0.3	0.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	69
swamp white oak	Quercus bicolor	NSL	Low	0.5	0.3	0.5	Very Lg. dec.	Lg. dec.	Medium	Rare	Lost	Very Poor			0	70
yellow buckeye	Aesculus flava	NSL	Low	0.5	0.2	0.4	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	71
eastern redbud	Cercis canadensis	NSL	Low	2.4	0.2	0.3	Lg. dec.	No change	Medium	Rare	Very Poor	Poor			0	72
ailanthus	Ailanthus altissima	NSL	FIA	0.1	0.2	0.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	73
black walnut	Juglans nigra	WDH	Low	0.5	0.2	0.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	74
black locust	Robinia pseudoacacia	NDH	Low	1.6	0.1	0.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	75
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	76
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	77
silver maple	Acer saccharinum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	78
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	79
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	80
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	81
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	82
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	83
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	84
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			0	85
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	86
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	87
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	88
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	89
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	90
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	91
chestnut oak	Quercus prinus	NDH	High	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	92
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	93
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	94