### **National Park**

# 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 8,788.6 3,393.3 91

## **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						Potential Change in Habitat Suitability			Capability	Migration Potential				
Ash	2				Model			Scenario	Scenario		Scenario	Scenario		SHIFT	SHIFT
Hickory	0	Abu	ndance		Reliability	Adaptability		RCP45	RCP85		RCP45	RCP85		RCP45	RCP85
Maple	1	Abundant	2	High	4	5	Increase	5	4	Very Good	2	1	Likely	1	1
Oak	3	Common	5	Medium	16	21	No Change	5	6	Good	5	6	Infill	9	9
Pine	1	Rare	7	Low	11	5	Decrease	3	3	Fair	1	1	Migrate	1	2
Other	7	Absent	13	FIA	1		New	6	6	Poor	2	2	-	11	12
-	14	_	27	-	32	31	Unknown	13	13	Very Poor	0	0			
							-	32	32	FIA Only	1	1			
										Unknown	12	12			
Potentia	I Chang	es in Climate Var	iables							•	23	23			

Temperature (°F)											
	Scenario	2009	2039	2069	2099						
Annual	CCSM45	75.2	76.3	77.5	77.6						
Average	CCSM85	75.2	76.3	78.3	80.2						
	GFDL45	75.2	78.9	79.0	79.9						
	GFDL85	75.2	77.2	80.0	82.9						
	HAD45	75.2	76.4	78.3	79.3						
	HAD85	75.2	76.9	79.0	82.0						
	0001445	04.6	02.5	02.5	02.7						
Growing	CCSM45	81.6	82.5	83.5	83.7						
Season	CCSM85	81.6	82.6	84.5	86.6						
May—Sep		81.6	85.4	85.4	86.4						
	GFDL85	81.6	83.7	86.4	89.5						
	HAD45	81.6	83.1	84.6	85.7						
	HAD85	81.6	83.4	85.8	88.4						
Coldest	CCSM45	64.4	65.9	66.7	66.6						
Month	CCSM85	64.4	65.3	66.2	67.6						
Average	GFDL45	64.4	66.6	66.9	67.5						
0 -	GFDL85	64.4	66.6	67.7	68.8						
	HAD45	64.4	64.8	65.9	66.3						
	HAD85	64.4	65.2	66.0	67.8						
Warmest	CCSM45	83.4	84.4	84.9	84.9						
Month	CCSM85	83.4	84.6	85.6	86.8						
Average	GFDL45	83.4	85.4	86.4	87.0						
Average	GFDL45 GFDL85	83.4	85.6	87.1	88.8						
	HAD45	83.4	85.1	85.8	•						
					86.2						
	HAD85	83.4	85.2	86.3	87.7						

Precipitation (in)												
	Scenario	2009	2039	2069	2099							
Annual	CCSM45	53.4	53.3	51.8	56.8							
Total	CCSM85	53.4	54.7	51.9	46.7							
	GFDL45	53.4	59.8	59.6	59.8							
	GFDL85	53.4	56.8	62.8	55.2							
	HAD45	53.4	56.2	56.6	54.3							
	HAD85	53.4	51.4	52.8	49.3							
Growing	CCSM45	37.7	37.6	36.3	39.6							
Season	CCSM85	37.7	38.5	37.0	32.0							
May—Sep	GFDL45	37.7	40.4	39.0	36.7							
	GFDL85	37.7	38.8	39.7	34.0							
	HAD45	37.7	38.5	38.7	34.0							
	HAD85	37.7	35.1	33.9	30.6							

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.



# **Big Cypress**

## **National Park**

## 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

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO N
pond cypress	Taxodium ascendens	NSH	Medium	45.2	1266.9	47.4 No change	No change	Medium	Abundant	Good	Good	Infill ++	Infill ++	1 1
cabbage palmetto	Sabal palmetto	NDH	Medium	44.4	8.008	29.6 No change	No change	Medium	Abundant	Good	Good			0 2
slash pine	Pinus elliottii	NDH	High	32.7	290.3	16.2 Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1 3
bald cypress	Taxodium distichum	NSH	Medium	20.5	157.5	12.5 No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1 4
live oak	Quercus virginiana	NDH	High	27.3	146.8	11.0 Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1 5
red maple	Acer rubrum	WDH	High	19.3	88.4	5.6 Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1 6
laurel oak	Quercus laurifolia	NDH	Medium	21.6	60.9	4.6 Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1 7
redbay	Persea borbonia	NSL	Low	28.4	48.8	2.4 Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1 8
Carolina ash	Fraxinus caroliniana	NSL	FIA	11.4	48.7	8.3 Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0 9
sweetbay	Magnolia virginiana	NSL	Medium	4.6	13.5	3.0 No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2 10
green ash	Fraxinus pennsylvanica	WSH	Low	2.3	10.2	4.5 No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2 11
common persimmon	Diospyros virginiana	NSL	Low	5.7	1.9	1.1 Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0 12
swamp tupelo	Nyssa biflora	NDH	Medium	1.1	1.9	1.6 Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0 13
water oak	Quercus nigra	WDH	High	1.1	0.7	0.6 Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0 14
serviceberry	Amelanchier spp.	NSL	Low	0	0	0 Unknown	Unknown	Medium	Absent	Unknown	Unknown			0 15
pawpaw	Asimina triloba	NSL	Low	0	0	0 Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0 16
sugarberry	Celtis laevigata	NDH	Medium	0	0	0 New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3 17
flowering dogwood	Cornus florida	WDL	Medium	0	0	0 Unknown	Unknown	Medium	Absent	Unknown	Unknown			0 18
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0 New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3 19
silverbell	Halesia spp.	NSL	Low	0	0	0 Unknown	Unknown	Medium	Absent	Unknown	Unknown			0 20
American holly	Ilex opaca	NSL	Medium	0	0	0 Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0 21
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0 Unknown	Unknown	Medium	Absent	Unknown	Unknown			0 22
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0 Unknown	Unknown	Medium	Absent	Unknown	Unknown			0 23
mountain or Fraser magnoli	a Magnolia fraseri	NSL	Low	0	0	0 Unknown	Unknown	Low	Absent	Unknown	Unknown			0 24
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0 New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3 25
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0 Unknown	Unknown	High	Modeled	Unknown	Unknown			0 26
cherrybark oak; swamp red	o: Quercus pagoda	NSL	Medium	0	0	0 New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0 27
Nuttall oak	Quercus texana	NSH	Medium	0	0	0 Unknown	Unknown	High	Modeled	Unknown	Unknown			0 28
black willow	Salix nigra	NSH	Low	0	0	0 New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3 29
American mountain-ash	Sorbus americana	NSL	Low	0	0	0 Unknown	Unknown	Low	Absent	Unknown	Unknown			0 30
winged elm	Ulmus alata	WDL	Medium	0	0	0 Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0 31
American elm	Ulmus americana	WDH	Medium	0	0	0 New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3 32

