

HUC 010400 Androscoggin

HUC 6 Watershed Climate Change Atlas Tree Species

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Landscape Change Research Group
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Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	9,135.6	3,527.3	354

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	3				Increase	16	19	Very Good	4	3	Likely	2	2	
Hickory	0				No Change	9	7	Good	10	15	Infill	6	9	
Maple	4	Abundant	High	21	14	Decrease	11	10	Fair	9	8	Migrate	8	12
Oak	3	Common	Medium	20	35	New	21	23	Poor	6	5		16	23
Pine	2	Rare	Low	22	14	Unknown	6	4	Very Poor	5	3			
Other	24	Absent	FIA	0					FIA Only	0	0			
	36	63		63	63		63	63	Unknown	6	4			
										40	38			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	38.4	39.7	41.3	41.4	
Average	CCSM85	38.4	40.1	41.9	44.2	
	GFDL45	38.4	40.4	42.9	43.9	
	GFDL85	38.4	40.8	43.9	47.5	
	HAD45	38.4	40.5	42.7	43.9	
	HAD85	38.4	40.7	43.5	47.4	
Growing Season	CCSM45	51.1	52.5	53.8	54.0	
	CCSM85	51.1	52.7	54.4	57.0	
May—Sep	GFDL45	51.1	53.4	55.9	57.1	
	GFDL85	51.1	53.7	56.9	60.7	
	HAD45	51.1	53.1	55.0	56.6	
	HAD85	51.1	52.9	56.1	60.2	
Coldest Month	CCSM45	18.4	19.6	20.9	21.2	
	CCSM85	18.4	20.4	21.3	23.1	
Average	GFDL45	18.4	20.4	22.2	23.1	
	GFDL85	18.4	21.1	22.9	25.0	
	HAD45	18.4	20.3	22.2	22.5	
	HAD85	18.4	21.4	23.1	25.7	
Warmest Month	CCSM45	55.4	56.9	57.8	57.8	
	CCSM85	55.4	57.3	58.5	59.8	
Average	GFDL45	55.4	57.6	59.0	59.9	
	GFDL85	55.4	57.8	59.9	61.9	
	HAD45	55.4	57.6	58.5	59.5	
	HAD85	55.4	57.3	59.2	62.0	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	33.9	33.1	32.3	36.0	
Total	CCSM85	33.9	34.0	34.6	36.2	
	GFDL45	33.9	36.8	39.1	38.0	
	GFDL85	33.9	35.7	37.9	38.9	
	HAD45	33.9	36.6	38.6	37.7	
	HAD85	33.9	37.5	37.3	39.7	
Growing Season	CCSM45	15.0	15.0	13.8	15.0	
	CCSM85	15.0	14.8	15.1	14.6	
May—Sep	GFDL45	15.0	14.7	14.4	14.5	
	GFDL85	15.0	15.1	14.5	13.6	
	HAD45	15.0	16.1	16.2	16.7	
	HAD85	15.0	15.7	15.6	17.0	

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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Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
balsam fir	Abies balsamea	NDH	High	94.7	1924.1	12.1	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	1
red maple	Acer balsamum	WDH	High	93.5	1709.5	11.1	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	2
sugar maple	Acer saccharum	WDH	High	88.3	1349.5	9.7	No change	No change	High	Abundant	Very Good	Very Good			1	3
yellow birch	Betula alleghaniensis	NDL	High	89.3	1207.3	8.5	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	4
red spruce	Picea rubens	NDH	High	82.2	928.9	7.3	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	5
eastern hemlock	Tsuga canadensis	NSH	High	55.3	860.8	9.3	Sm. inc.	No change	Low	Abundant	Good	Fair			1	6
paper birch	Betula papyrifera	WDH	High	91.5	854.6	5.5	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	7
eastern white pine	Pinus strobus	WDH	High	56.9	819.7	8.8	Sm. inc.	Sm. inc.	Low	Abundant	Good	Good			1	8
American beech	Fagus grandifolia	WDH	High	74.7	807.6	6.7	Sm. inc.	No change	Medium	Abundant	Very Good	Good			1	9
northern red oak	Quercus rubra	WDH	Medium	44.6	476.6	6.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	10
white ash	Fraxinus americana	WDL	Medium	52.8	316.0	3.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	11
quaking aspen	Populus tremuloides	WDH	High	55.9	256.6	2.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
striped maple	Acer pensylvanicum	NSL	Medium	62.3	173.5	1.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	13
bigtooth aspen	Populus grandidentata	NSL	Medium	34.9	165.3	3.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
northern white-cedar	Thuja occidentalis	WSH	High	19.1	154.7	4.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
white spruce	Picea glauca	NSL	Medium	25.5	100.4	2.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	16
black cherry	Prunus serotina	WDL	Medium	26	89.3	1.3	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	17
gray birch	Betula populifolia	NSL	Low	23.5	89.0	1.9	No change	No change	Medium	Common	Fair	Fair			1	18
black spruce	Picea mariana	NSH	High	5.7	65.3	7.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	19
pin cherry	Prunus pensylvanica	NSL	Low	31.8	46.8	0.9	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	20
American elm	Ulmus americana	WDH	Medium	14.7	46.8	1.4	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	21
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	19.1	39.7	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	22
tamarack (native)	Larix laricina	NSH	High	5.2	31.5	2.3	No change	No change	Low	Rare	Very Poor	Very Poor			2	23
American mountain-ash	Sorbus americana	NSL	Low	19.1	20.4	0.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	24
American basswood	Tilia americana	WSL	Medium	7.5	17.5	1.7	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +	Infill ++	1	25
mountain maple	Acer spicatum	NSL	Low	17.2	14.7	0.7	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	26
black ash	Fraxinus nigra	WSH	Medium	9.8	10.1	0.6	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	1	27
black oak	Quercus velutina	WDH	High	3.5	7.7	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	28
red pine	Pinus resinosa	NSH	Medium	4.4	7.5	1.1	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	29
green ash	Fraxinus pennsylvanica	WSH	Low	1.8	3.8	1.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good		Infill ++	2	30
white oak	Quercus alba	WDH	Medium	1.5	3.4	0.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	31
black locust	Robinia pseudoacacia	NDH	Low	1.1	3.3	3.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	32
serviceberry	Amelanchier spp.	NSL	Low	3.3	2.8	0.8	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +	Infill ++	1	33
balsam poplar	Populus balsamifera	NSH	Medium	0.1	1.6	0.2	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	34
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	1.1	1.2	1.1	No change	Lg. inc.	Medium	Rare	Poor	Good			2	35
slippery elm	Ulmus rubra	WSL	Low	1.1	1.0	1.0	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	36
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	37
pitch pine	Pinus rigida	NSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	38
loblolly pine	Pinus taeda	WDH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	39
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	40
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	41
sweet birch	Betula lenta	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	42
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	43
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	44
pecan	Carya illinoensis	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	45
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	46
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	48
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	49
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	50
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	51
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	52
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	53
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	54
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	55
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	56
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	57
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	58
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	59
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	60
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	61
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	62
sassafras	Sassafras albidum	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	63