

One x One Degree
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

Table with 4 columns: Area of Region, sq. km, sq. mi, FIA Plots. Values: 8,837.4, 3,412.1, 80.

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.

Large table with 7 columns: Genus, Species, Abundance, Model, Potential Change in Habitat Suitability, Capability to Cope or Persist, Migration Potential. Includes sub-tables for Abundance, Model, and Migration Potential.

Potential Changes in Climate Variables

Table showing potential changes in temperature (°F) for various scenarios (2009, 2039, 2069, 2099) across different categories like Annual, Growing Season, Coldest Month, Warmest Month.

Table showing potential changes in precipitation (in) for various scenarios (2009, 2039, 2069, 2099) across different categories like Annual, Growing Season, May-Sep.

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.

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
boxelder	Acer negundo	WSH	Low	80.7	369.8	14.1	Sm. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	1
American basswood	Tilia americana	WSL	Medium	48.5	265.4	10.8	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	2
green ash	Fraxinus pennsylvanica	WSH	Low	63.5	220.2	8.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	3
bur oak	Quercus macrocarpa	NDH	Medium	38.7	180.0	9.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	2	4
northern red oak	Quercus rubra	WDH	Medium	52.9	168.2	9.7	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	5
American elm	Ulmus americana	WDH	Medium	67.4	159.7	6.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	6
sugar maple	Acer saccharum	WDH	High	46	159.1	11.5	No change	Sm. dec.	High	Common	Good	Fair	Infill ++	Infill +	2	7
eastern cottonwood	Populus deltoides	NSH	Low	21.9	133.2	20.4	No change	Sm. inc.	Medium	Common	Fair	Good	Infill +	Infill ++	2	8
black cherry	Prunus serotina	WDL	Medium	43	89.7	5.0	Sm. inc.	No change	Low	Common	Fair	Poor	Infill +	Infill +	1	9
eastern redcedar	Juniperus virginiana	WDH	Medium	22.4	85.2	6.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	2	10
black willow	Salix nigra	NSH	Low	20.9	83.2	13.4	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor		Infill +	2	11
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	45.2	78.8	6.0	No change	Sm. dec.	High	Common	Good	Fair	Infill ++	Infill +	1	12
slippery elm	Ulmus rubra	WSL	Low	34.5	62.2	4.2	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	13
northern white-cedar	Thuja occidentalis	WSH	High	2.3	54.0	23.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	14
quaking aspen	Populus tremuloides	WDH	High	24.5	52.5	6.2	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	15
silver maple	Acer saccharinum	NSH	Low	13.4	51.8	9.3	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	2	16
white oak	Quercus alba	WDH	Medium	8.8	49.1	9.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	17
black walnut	Juglans nigra	WDH	Low	19.2	33.4	4.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	18
hackberry	Celtis occidentalis	WDH	Medium	37.3	31.2	2.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	19
bitternut hickory	Carya cordiformis	WSL	Low	31.7	21.1	2.7	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	20
northern pin oak	Quercus ellipsoidalis	NSH	Medium	18.5	18.7	8.4	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	21
red pine	Pinus resinosa	NSH	Medium	2.3	15.2	3.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	22
Siberian elm	Ulmus pumila	NDH	FIA	5.7	11.8	7.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	23
jack pine	Pinus banksiana	NSH	Medium	5.4	10.9	7.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	24
eastern white pine	Pinus strobus	WDH	High	2	8.9	3.8	No change	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	25
black ash	Fraxinus nigra	WSH	Medium	11.8	7.3	1.0	Sm. inc.	Sm. dec.	Low	Rare	Poor	Very Poor	Infill +		2	26
paper birch	Betula papyrifera	WDH	High	6.3	4.8	2.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	27
white spruce	Picea glauca	NSL	Medium	4.3	4.7	15.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	28
chokecherry	Prunus virginiana	NSLX	FIA	3.7	3.5	0.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	29
peachleaf willow	Salix amygdaloides	NSLX	FIA	2.3	3.2	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	30
wild plum	Prunus americana	NSLX	FIA	2.3	2.4	1.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	31
American mountain-ash	Sorbus americana	NSL	Low	0.7	2.1	1.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	32
butternut	Juglans cinerea	NSLX	FIA	5.8	2.0	0.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	33
black locust	Robinia pseudoacacia	NDH	Low	0.8	1.7	1.1	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	34
rock elm	Ulmus thomasii	NSLX	FIA	4.5	1.7	6.1	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	35
serviceberry	Amelanchier spp.	NSL	Low	1.2	1.2	1.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	36
white ash	Fraxinus americana	WDL	Medium	0.3	0.9	0.2	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	37
red mulberry	Morus rubra	NSL	Low	0.9	0.8	0.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	38
mountain maple	Acer spicatum	NSL	Low	3.1	0.6	1.5	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	39
bigtooth aspen	Populus grandidentata	NSL	Medium	4.3	0.5	1.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	40
shagbark hickory	Carya ovata	WSL	Medium	3.7	0.3	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	41
red maple	Acer rubrum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	42
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	43
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	44
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	45
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	46
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	47



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sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	48
balsam poplar	Populus balsamifera	NSH	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	49
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	50
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	51
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	52
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	53