

# Catoctin Mountain Park

## National Park

### Climate Change Atlas Tree Species

#### Current and Potential Future Habitat, Capability, and Migration

Landscape Change Research Group  
Iverson, Peters, Prasad, Matthews  
USFS Northern Research Station  
Delaware, OH

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
chestnut oak	Quercus prinus	NDH	High	56.7	774.4	21.96	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			2	1
red maple	Acer rubrum	WDH	High	51.1	457.31	11.32	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	2
yellow-poplar	Liriodendron tulipifera	WDH	High	36.7	422.37	15.32	Sm. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	3
black cherry	Prunus serotina	WDL	Medium	60	403.83	10.49	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	4
white oak	Quercus alba	WDH	Medium	53.3	281.21	9.39	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			2	5
white ash	Fraxinus americana	WDL	Medium	48.9	260.38	8.77	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	6
northern red oak	Quercus rubra	WDH	Medium	53.3	241.38	8.18	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			2	7
black locust	Robinia pseudoacacia	NDH	Low	33.3	207.33	9.17	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	8
black oak	Quercus velutina	WDH	High	43.3	186.38	7.95	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	9
pignut hickory	Carya glabra	WDL	Medium	45.6	182.84	7.42	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	10
black walnut	Juglans nigra	WDH	Low	30	173.5	8.91	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	11
sweet birch	Betula lenta	NDH	High	22.2	168.88	9.25	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	12
blackgum	Nyssa sylvatica	WDL	Medium	40	158.43	7.13	No change	Sm. inc.	High	Common	Good	Very Good			2	13
eastern redcedar	Juniperus virginiana	WDH	Medium	15.6	143.07	17.44	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	14
ailanthus	Ailanthus altissima	NSL	FIA	32.2	140.61	6.51	Unknown	Unknown	NA	Common	NNIS	NNIS			0	15
eastern white pine	Pinus strobus	WDH	High	13.3	132.83	13.43	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			2	16
hackberry	Celtis occidentalis	WDH	Medium	15.6	116.93	7.52	Sm. dec.	No change	High	Common	Fair	Good			2	17
mockernut hickory	Carya alba	WDL	Medium	33.3	87.08	4.82	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			2	18
baldelder	Acer negundo	WSH	Low	20	83.23	10.64	No change	No change	High	Common	Good	Very Good			2	19
bitternut hickory	Carya cordiformis	WSL	Low	16.7	82.47	8.97	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			2	20
sassafras	Sassafras albidum	WSL	Low	30	75.58	3.88	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			2	21
American beech	Fagus grandifolia	WDH	High	11.1	68.73	6.19	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			2	22
scarlet oak	Quercus coccinea	WDL	Medium	20	65.63	4.14	Sm. inc.	No change	Medium	Common	Good	Fair		Infill +	2	23
shagbark hickory	Carya ovata	WSL	Medium	26.7	55.78	4.42	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			2	24
silver maple	Acer saccharinum	NSH	Low	11.1	54.3	19.97	Sm. dec.	No change	High	Common	Fair	Good			0	25
sycamore	Platanus occidentalis	NSL	Low	12.2	54.19	6.19	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	26
sugar maple	Acer saccharum	WDH	High	8.9	45.77	5.15	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	27
Virginia pine	Pinus virginiana	NDH	High	18.9	42.98	5.69	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	28
eastern hemlock	Tsuga canadensis	NSH	High	5.6	33.42	6.02	Sm. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	29
Norway maple	Acer platanoides	NSL	FIA	6.7	29.24	8.89	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	30
American basswood	Tilia americana	WSL	Medium	7.8	29.13	3.75	No change	Sm. dec.	Medium	Rare	Poor	Very Poor			0	31
red mulberry	Morus rubra	NSL	Low	10	17.92	10.65	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	32
white mulberry	Morus alba	NSL	FIA	7.8	16.01	6.65	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	33
American elm	Ulmus americana	WDH	Medium	20	14.5	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	34
pitch pine	Pinus rigida	NSH	High	4.4	12.69	2.86	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	35
yellow birch	Betula alleghaniensis	NDL	High	1.1	10.92	9.83	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	36
serviceberry	Amelanchier spp.	NSL	Low	12.2	10.23	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	37
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	13.3	10.04	1.85	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	38
Osage-orange	Maclura pomifera	NDH	Medium	1.1	8.83	7.95	Sm. dec.	No change	High	Rare	Poor	Fair			0	39
slippery elm	Ulmus rubra	WSL	Low	7.8	8.66	2.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	40
eastern redbud	Cercis canadensis	NSL	Low	13.3	8.27	1.49	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	41
flowering dogwood	Cornus florida	WDL	Medium	20	7.69	0.93	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	42
pawpaw	Asimina triloba	NSL	Low	7.8	7.5	1.96	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	43
honeylocust	Gleditsia triacanthos	NSH	Low	2.2	7.5	3.38	No change	Sm. inc.	High	Rare	Fair	Good			2	44
common persimmon	Diospyros virginiana	NSL	Low	1.1	7.33	6.6	Sm. inc.	Lg. inc.	High	Rare	Good	Good			2	45
pin oak	Quercus palustris	NSH	Low	8.9	6.04	10.88	No change	No change	Low	Rare	Very Poor	Very Poor			2	46
green ash	Fraxinus pennsylvanica	WSH	Low	5.6	6.01	3.38	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	47
swamp chestnut oak	Quercus michauxii	NSL	Low	6.7	5.67	2.06	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	48
butternut	Juglans cinerea	NSLX	FIA	1.1	5.48	4.93	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	49
swamp white oak	Quercus bicolor	NSL	Low	4.4	4.51	16.25	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
loblolly pine	Pinus taeda	WDH	High	1.1	3.89	3.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	51
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	4.4	3.86	0.87	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +		2	52
striped maple	Acer pensylvanicum	NSL	Medium	1.1	3.78	3.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	53



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black willow	Salix nigra	NSH	Low	1.1	3.74	3.37	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	54	
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.1	2.74	2.47	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	55
cucumbertree	Magnolia acuminata	NSL	Low	2.2	2.62	1.18	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	56
shortleaf pine	Pinus echinata	WDH	High	1.1	1.83	1.65	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	57
chokecherry	Prunus virginiana	NSLX	FIA	1.1	1.78	1.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	58
southern red oak	Quercus falcata	WDL	Medium	4.4	0.58	2.08	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2	59
white spruce	Picea glauca	NSL	Medium	4.4	0.42	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	60
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	4.4	0.19	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	61
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	NA	Absent	New Habitat	New Habitat				0	62
red spruce	Picea rubens	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	63
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	64
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3	65
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	66
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	67
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0	68
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	69
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	70
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	71
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	72
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3	73
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	74
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3	75
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	76
quaking aspen	Populus tremuloides	WDH	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	77
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	78
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	79
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	80
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3	81
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	82
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	83
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3	84
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3	85
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	86
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	87
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	88
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				0	89