Francis Marion

National Forests and Grasslands

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
loblolly pine	Pinus taeda	WDH	High	95.5	4251.57	45.01	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
sweetgum	Liquidambar styraciflua	WDH	High	87.1	969.22	11.36	No change	No change	Medium	Abundant	Good	Good			1	2
water oak	Quercus nigra	WDH	High	81.8	523.34	6.75	Sm. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			1	3
red maple	Acer rubrum	WDH	High	83.8	467.31	5.75	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	4
longleaf pine	Pinus palustris	NSH	Medium	38.2	399.97	9.92	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	5
swamp tupelo	Nyssa biflora	NDH	Medium	59.5	374.67	6.39	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	6
laurel oak	Quercus laurifolia	NDH	Medium	68	262.85	4.11	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	7
pond pine	Pinus serotina	NSH	Medium	20.2	168.96	7.83	No change	No change	Low	Common	Poor	Poor			0	8
willow oak	Quercus phellos	NSL	Low	31.8	105.26	3.45	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	9
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	30.8	98.9	3.53	No change	No change	Medium	Common	Fair	Fair			1	10
bald cypress	Taxodium distichum	NSH	Medium	21.9	88.55	4.04	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	11
water tupelo	Nyssa aquatica	NSH	Medium	9.7	85.31	8.77	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	12
pond cypress	Taxodium ascendens	NSH	Medium	13.4	82.55	6.17	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	13
green ash	Fraxinus pennsylvanica	WSH	Low	29.2	82.39	2.82	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
live oak	Quercus virginiana	NDH	High	22.1	76.4	3.96	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	15
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	22.7	75.23	3.93	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
mockernut hickory	Carya alba	WDL	Medium	26.5	64.41	2.38	No change	Sm. inc.	High	Common	Good	Very Good			1	17
redbay	Persea borbonia	NSL	Low	37.9	62.75	1.71	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	18
blackgum	Nyssa sylvatica	WDL	Medium	31.3	56.96	1.79	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	19
post oak	Quercus stellata	WDH	High	20.3	50.54	2.43	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	20
black willow	Salix nigra	NSH	Low	15.4	44.15	3.93	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair			1	21
scarlet oak	Quercus coccinea	WDL	Medium	13	41.47	4.33	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	22
American elm	Ulmus americana	WDH	Medium	21.9	40.6	1.85	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	23
sugarberry	Celtis laevigata	NDH	Medium	10.2	39.53	4.82	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	24
swamp chestnut oak	Quercus michauxii	NSL	Low	22.7	39.03	2.08	No change	No change	Medium	Rare	Poor	Poor			1	25
yellow-poplar	Liriodendron tulipifera	WDH	High	16.6	33.01	2.75	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	26
sweetbay	Magnolia virginiana	NSL	Medium	21.6	31.41	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	27
slippery elm	Ulmus rubra	WSL	Low	12.2	30.99	2.55	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	28
white oak	Quercus alba	WDH	Medium	14.6	27.5	1.88	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	29
American holly	Ilex opaca	NSL	Medium	25.5	26.24	1.03	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	30
shortleaf pine	Pinus echinata	WDH	High	7.3	25.41	3.48	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	31
slash pine	Pinus elliottii	NDH	High	7	23.01	3.09	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	32
river birch	Betula nigra	NSL	Low	7.3	19.35	2.65	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	33
southern red oak	Quercus falcata	WDL	Medium	19.1	19.24	1.23	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	34
overcup oak	Quercus lyrata	NSL	Medium	10.6	18.4	2.56	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	1	35
sycamore	Platanus occidentalis	NSL	Low	2.4	17.31	7.11	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	36
hackberry	Celtis occidentalis	WDH	Medium	2.4	17.15	7.05	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	37
flowering dogwood	Cornus florida	WDL	Medium	10.9	16.7	1.52	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	38
black cherry	Prunus serotina	WDL	Medium	24.2	16.27	1.01	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			1	39
water elm	Planera aquatica	NSL	Low	6.1	15.8	2.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	40
eastern redcedar	Juniperus virginiana	WDH	Medium	7.2	15.68	6.03	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	41
turkey oak	Quercus laevis	NSH	Medium	3.6	15.07	4.13	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +		1	42
water hickory	Carya aquatica	NSL	Medium	6.1	14.05	2.31	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	43
spruce pine	Pinus glabra	NSL	Low	3.6	12.49	3.42	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
eastern cottonwood	Populus deltoides	NSH	Low	2.4	11.63	4.78	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	45
bitternut hickory	Carya cordiformis	WSL	Low	1.2	10.38	8.53	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	46
common persimmon	Diospyros virginiana	NSL	Low	15.1	9.61	0.81	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	47
boxelder	Acer negundo	WSH	Low	8.1	8.82	1.92	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	48
pignut hickory	Carya glabra	WDL	Medium	4.9	8.37	1.72	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	49
winged elm	Ulmus alata	WDL	Medium	7.3	7.23	0.99	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good		Infill ++	1	50
loblolly-bay	Gordonia lasianthus	NSH	Medium	3.6	7.03	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	51
black oak	Quercus velutina	WDH	High	4.9	5.15	1.06	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	52
American beech	Fagus grandifolia	WDH	High	3.6	4.54	1.24	No change	No change	Medium	Rare	Poor	Poor	Infill +		2	53

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
blackjack oak	Quercus marilandica	NSL	Medium	6.1	4.46	0.73	Lg. dec.	No change	High	Rare	Poor	Fair		Infill +	2	54
pecan	Carya illinoinensis	NSH	Low	5.3	4.2	2.02	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	55
Carolina ash	Fraxinus caroliniana	NSL	FIA	1.2	2.88	2.37	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	56
shagbark hickory	Carya ovata	WSL	Medium	1.2	2.23	1.83	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	57
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	6.7	2.2	0.63	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	58
sassafras	Sassafras albidum	WSL	Low	5.3	2.12	0.73	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair		Infill +	2	59
pumpkin ash	Fraxinus profunda	NSH	FIA	1.2	1.34	1.1	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	60
northern red oak	Quercus rubra	WDH	Medium	1.1	0.94	0.7	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	61
bluejack oak	Quercus incana	NSL	Low	1.2	0.88	0.72	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	62
southern magnolia	Magnolia grandiflora	NSL	Low	4.5	0.84	2.52	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	63
Shumard oak	Quercus shumardii	NSL	Low	4.5	0.6	1.82	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	64
sand hickory	Carya pallida	NSL	FIA	1.2	0.51	0.42	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	65
wild plum	Prunus americana	NSLX	FIA	1.2	0.44	0.36	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	66
red mulberry	Morus rubra	NSL	Low	2.9	0.43	0.83	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	67
sourwood	Oxydendrum arboreum	NDL	High	1.2	0.24	0.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	68
cabbage palmetto	Sabal palmetto	NDH	Medium	4.5	0.17	0.52	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			0	69
eastern redbud	Cercis canadensis	NSL	Low	4.5	0.11	0.31	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	70
florida maple	Acer barbatum	NSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	71
silver maple	Acer saccharinum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	72
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	73
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	74
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	76
white ash	Fraxinus americana	WDL	Medium	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown			0	77
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	78
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	79
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	80
black walnut	Juglans nigra	WDH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	81
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	82
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	83
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	84
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	85
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	86
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	87
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	88
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	89