



Enhanced Conservation Action Planning

Forecasting Future Conditions

Quick Snapshot of Approach

- ❑ 20 year VDDT simulations as baseline
- ❑ 50 year simulations to see trends
- ❑ Assumptions
 - No management of the ecological systems
 - Continued suppression of wildfires to protect lives and property
 - Some continued U-class increases for oak and pine



Modeling Fire Suppression

- ❑ Fire suppression, given the Cherokee NF configuration, is a reality of future management, and therefore needs to be captured in the model.
- ❑ Modeled using VDDT at two different levels - moderate (indirect) and high (direct) - based on type of fire and % of successful suppression.
- ❑ Greatest effective suppression of surface fires, least for replacement fires

Suppression	% Surface Fires	% Mixed Fires	% Replacement Fires
Moderate	60%	40%	20%
High	90%	80%	60%

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Annual Acres Burned Under 3 Scenarios

Ecological System	Acres (rounded to nearest 100)	Simulated Fire -- Annual Ave. Acres		
		No Mgmt w Natural Fire- 50 yrs	No Mgmt w Medium Fire Suppression - 50Yrs	No Mgmt w Heavy Fire Suppression - 50Yrs
Cove Forest	103,000	1,375	665	175
Dry Oak Forest	65,900	4,580	2,060	440
Dry-Mesic Oak Forest	40,800	2,350	990	270
Low-Elevation Pine Forest	23,800	4,320	1,780	575
Montane Pine Forest & Woodland	21,800	2,490	960	225
Montane Red-Chestnut Oak Forest	71,800	3,370	1,430	390
Northern Hardwood Forest	11,600	45	30	15
Riparian & Floodplain Systems	2,500	15	7	2
Spruce-Fir Forest	2,200	1	1	0
Totals	343,400	18,500	7,900	2,100
			43%	11%



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Modeled U-Class Increases w/o Fire

Slight Increases for Oak

Uncharacteristic Class	Dry Oak		Dry-Mesic Oak		Montane Red Oak	
	Current	50 Yrs High Suppression	Current	50 Yrs High Suppression	Current	50 Yrs High Suppression
U- White Pine	3%	5%	3%	5%	1%	3%
U- Yellow Poplar	1%	3%	-	-	2%	3%

Large Increase for Montane Pine

Uncharacteristic Class	Montane Pine		Low-Elevation Pine	
	Current	50 Yrs High Suppression	Current	50 Yrs High Suppression
U- Oak Dominated	20%	30%	32%	36%

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Results

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Ecological Departure Summary - 20 Year Forecasts Under Three Fire Scenarios

Ecological System	Acres	Ecological Departure			
		Current Condition	No Mgmt w Natural Fire - 20 yrs	No Mgmt w Medium Fire Suppression - 20Yrs	No Mgmt w Heavy Fire Suppression - 20Yrs
Cove Forest					
Cove Forest	103,000	47	32	32	34
Oak Forests					
Dry Oak Forest	65,900	61	45	51	60
Dry-Mesic Oak Forest	40,800	54	37	43	51
Montane Red-Chestnut Oak Forest	71,800	47	30	33	38
Pine Forests & Woodlands					
Low-Elevation Pine Forest	23,800	90	41	58	74
Montane Pine Forest & Woodland	21,800	82	54	65	80
Other Forests					
Northern Hardwood Forest	11,600	12	10	11	14
Spruce-Fir Forest	2,200	80	81	81	81
Riparian					
Riparian & Floodplain Systems	2,500	54	34	37	38



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Ecological Departure - 20 & 50 Year Forecasts Assuming Medium Fire Suppression

Ecological System	Acres	Ecological Departure		
		Current Condition	No Mgmt w Medium Fire Suppression - 20Yrs	No Mgmt w Medium Fire Suppression - 50Yrs
Cove Forest				
Cove Forest	103,000	47	32	23
Oak Forests				
Dry Oak Forest	65,900	61	51	42
Dry-Mesic Oak Forest	40,800	54	43	38
Montane Red-Chestnut Oak Forest	71,800	47	33	28
Pine Forests & Woodlands				
Low-Elevation Pine Forest	23,800	90	58	42
Montane Pine Forest & Woodland	21,800	82	65	58
Other Forests				
Northern Hardwood Forest	11,600	12	11	9
Spruce-Fir Forest	2,200	80	81	81
Riparian				
Riparian & Floodplain Systems	2,500	54	37	19



Quick Snapshot of Findings

- ❑ Overall Outcomes
 - Most systems show some improvement, especially after 50 years (Mother Nature & Father Time)
 - Fire suppression adversely affects oak & pine
 - Spruce-fir departure remains high regardless
 - Northern hardwood departure remains low regardless
- ❑ With Moderate Fire Suppression Over 20 Yrs
 - Six ecological systems remain highly or moderately departed
 - The two pine forests and the two drier oak forests notably require attention
 - Spruce-fir forest requires restoration

