

# U-B-Gone Model Run Outcomes

Workshop -- September 9, 2011



# Cherokee National Forest Landscape Restoration Initiative

## Today

- Review U-B-Gone model run results
  - 20 Years summary
  - 50 Years summary
  - Graphs for all systems
  - Old growth model runs (20 years)



# Cherokee National Forest Landscape Restoration Initiative

## 20 Year Outcomes Summary



# Cherokee National Forest Landscape Restoration Initiative

## Current & Forecast Conditions

### Cherokee NF Ecological Forecasts -- 20 Years

*Model Runs - June-August, 2011*

Ecological System	Acres (rounded to nearest 100)	Ecological Departure		
		Current Condition	No Mgmt w Fire Suppression	U-B-Gone Mgmt
Cove Forest	103,000	47	34	30
Dry Oak Forest	65,900	61	60	37
Dry-Mesic Oak Forest	40,800	54	49	34
Low-Elevation Pine Forest	23,800	90	72	35
Montane Pine Forest	21,800	82	80	35
Montane Red-Chestnut Oak Forest	71,800	47	39	25
Northern Hardwood Forest	11,600	12	14	-
Riparian & Floodplain Systems	2,500	54	39	-
Spruce-Fir Forest	2,200	40	40	24

## Benefits: U-B-Gone Management

- Improves ecological departure for all systems to low or close-to-low departure from NRV
- Brings the two highly departed pine systems out of "red" zone (high departure from NRV)
- Restores three systems to "green" condition
- Greatly reduces uncharacteristic vegetation
- Increases early succession habitat for all systems
- Increases old growth in cove & oak forests
- Reduces late-closed & increases late-open habitat for all oak & pine systems



# Cherokee National Forest Landscape Restoration Initiative

## Cost, ROI & Management Across Systems

Cherokee NF Ecological Forecasts -- 20 Years					
<i>Model Runs - June-August, 2011</i>					
Ecological System	Acres (rounded to nearest 100)	Ecological Departure		Area- Weighted ROI (U-B- Gone Mgmt)	U-B-Gone Mgmt - Ave. Annual Cost
		No Mgmt w Fire Suppression	U-B-Gone Mgmt		
Cove Forest	103,000	34	30	1.1	\$ 22,500
Dry Oak Forest	65,900	60	37	0.8	\$ 112,100
Dry-Mesic Oak Forest	40,800	49	34	1.2	\$ 32,500
Low-Elevation Pine Forest	23,800	72	35	0.7	\$ 93,750
Montane Pine Forest	21,800	80	35	0.7	\$ 97,750
Montane Red-Chestnut Oak Forest	71,800	39	25	1.0	\$ 62,550
Northern Hardwood Forest	11,600	14	-		
Riparian & Floodplain Systems	2,500	39	-		\$ -
Spruce-Fir Forest	2,200	40	24	0.4	\$ 12,000
Average Annual Cost					\$ 433,000
Average Annual Acres Prescribed Fire			4,900		
Ave. Annual Acres Commerical Harvest			1,600		

## U-B-Gone Management Summary

- Combines prescribed fire & commercial harvest
  - ~ 4,900 ave. acres/year prescribed fire
  - ~ 1,600 ave. acres/year commercial harvest
- Average annual cost ~ \$430,000
- ROI (area-weighted) is roughly equivalent for all major systems



# Cherokee National Forest Landscape Restoration Initiative

## 50 Year Outcomes Summary






# Cherokee National Forest Landscape Restoration Initiative

## 20 Years vs. 50 Years

Ecological System	Acres (rounded to nearest 100)	Ecological Departure	
		U-B-Gone Mgmt	
		20 Years	50 Years
Cove Forest	103,000	30	21
Dry Oak Forest	65,900	37	29
Dry-Mesic Oak Forest	40,800	34	33
Low-Elevation Pine Forest	23,800	35	21
Montane Pine Forest	21,800	35	32
Montane Red-Chestnut Oak Forest	71,800	25	11
Northern Hardwood Forest	11,600	-	-
Riparian & Floodplain Systems	2,500	-	-
Spruce-Fir Forest	2,200	24	11



## 50 Year Results Summary

- 
- Continued the same basic U-B-Gone treatment mix as 20 year runs, with minor adjustments
    - Reduced or stopped treatments of u-classes as they were reduced over time
    - Some minor treatment, timing and acre adjustments
  - All systems move into the "green" zone ! (low departure from NRV)
  - Uncharacteristic vegetation virtually eliminated
  - Average annual cost slightly less over time

# Cherokee National Forest Landscape Restoration Initiative

## U-B-Gone vs. No Management

<b>Cherokee NF Ecological Forecasts -- 50 Years</b>				
<i>Model Runs - August, 2011</i>				
<b>Ecological System</b>	<b>Acres</b> (rounded to nearest 100)	<b>Ecological Departure</b>		<b>U-B-Gone Mgmt - Ave. Annual Cost over 50 Years</b>
		<b>No Mgmt - 50 Years</b>	<b>U-B-Gone Mgmt - 50 Years</b>	
Cove Forest	103,000	24	21	\$ 22,500
Dry Oak Forest	65,900	58	29	\$ 104,540
Dry-Mesic Oak Forest	40,800	59	33	\$ 31,180
Low-Elevation Pine Forest	23,800	65	21	\$ 67,950
Montane Pine Forest	21,800	83	32	\$ 96,600
Montane Red-Chestnut Oak Forest	71,800	40	11	\$ 64,220
Northern Hardwood Forest	11,600	12	-	
Riparian & Floodplain Systems	2,500	22	-	\$ -
Spruce-Fir Forest	2,200	39	11	\$ 4,800
Average Annual Cost over 50 Years				\$ 392,000



# Cherokee National Forest Landscape Restoration Initiative

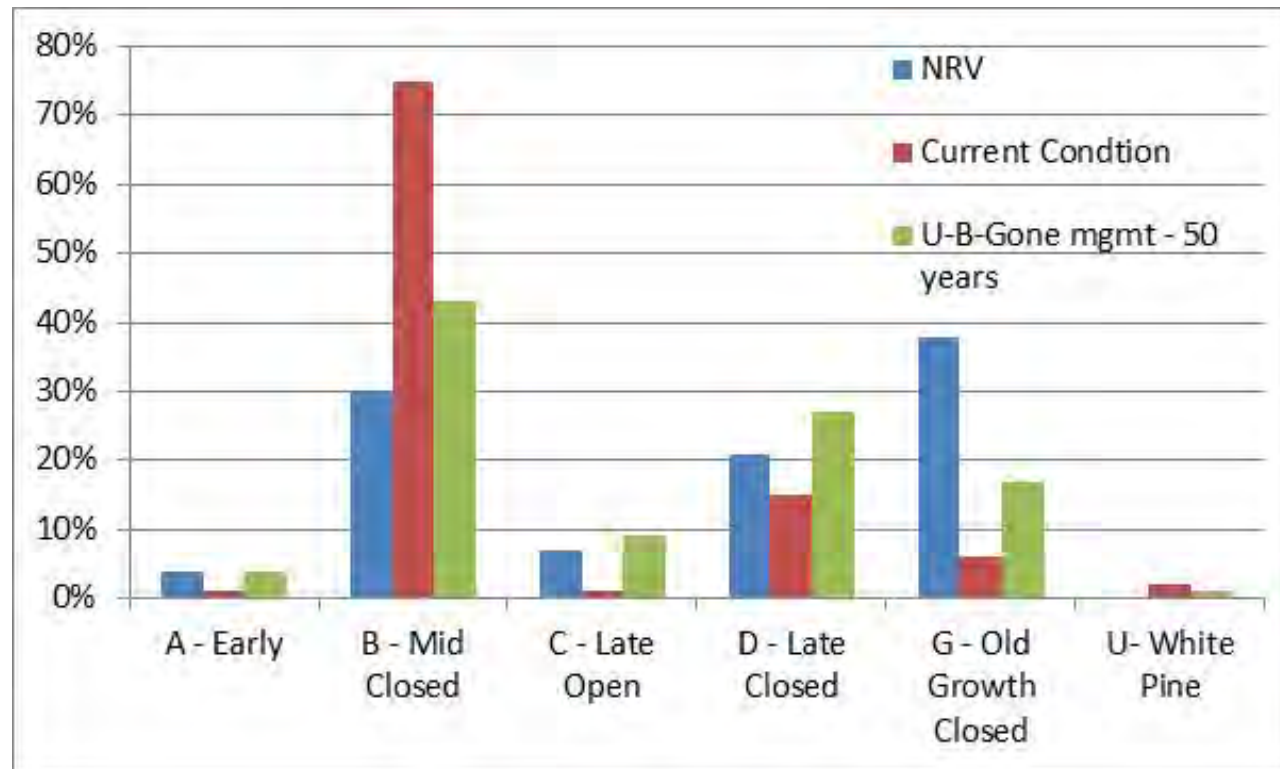


50 Year Graphs by System

# Cherokee National Forest Landscape Restoration Initiative

## Cove Forest

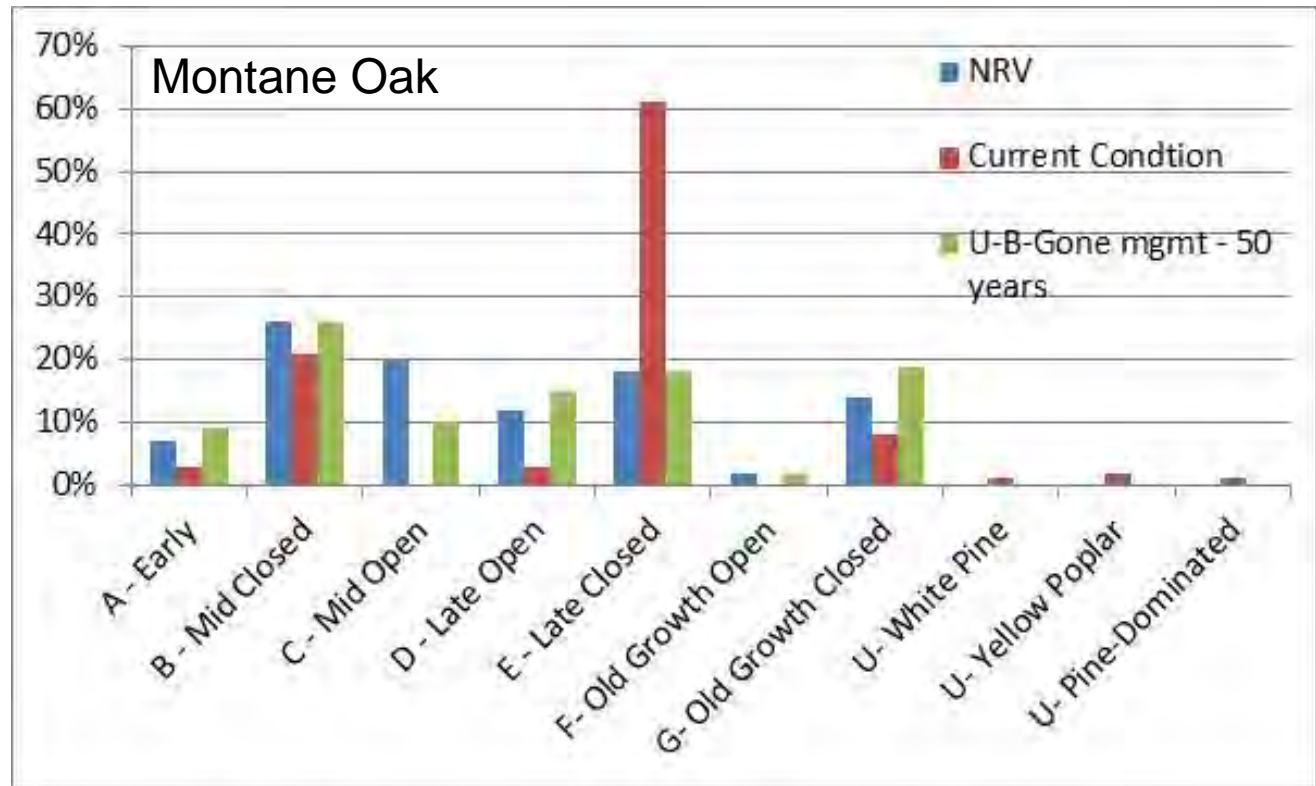
- Largest ecological system – 103,000 acres – 30% of the landscape



# Cherokee National Forest Landscape Restoration Initiative

## Oak Forests

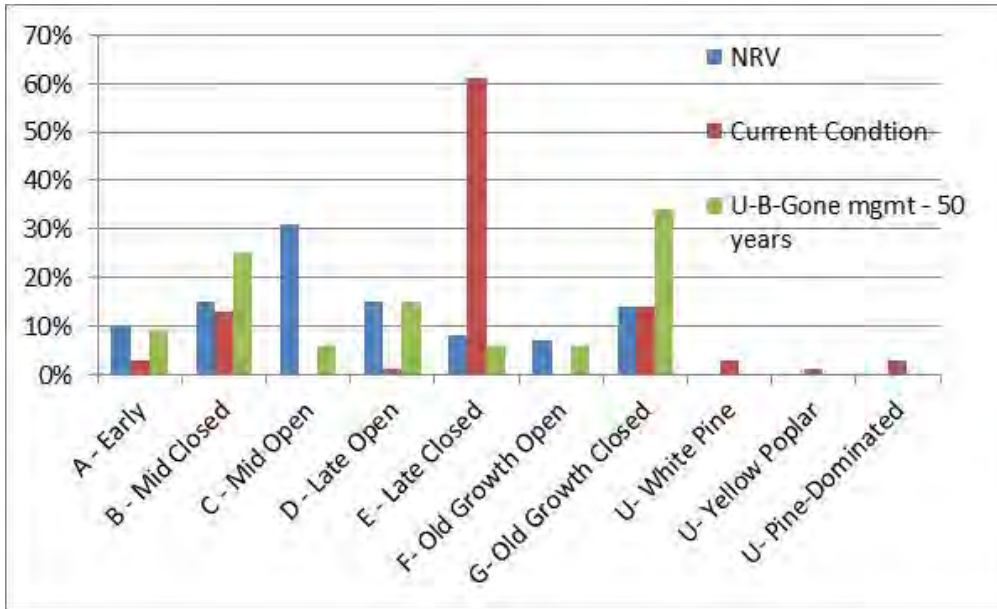
Dry Oak, Dry-Mesic Oak, Montane Red-Chestnut Oak  
Collectively make up over 50% of the landscape



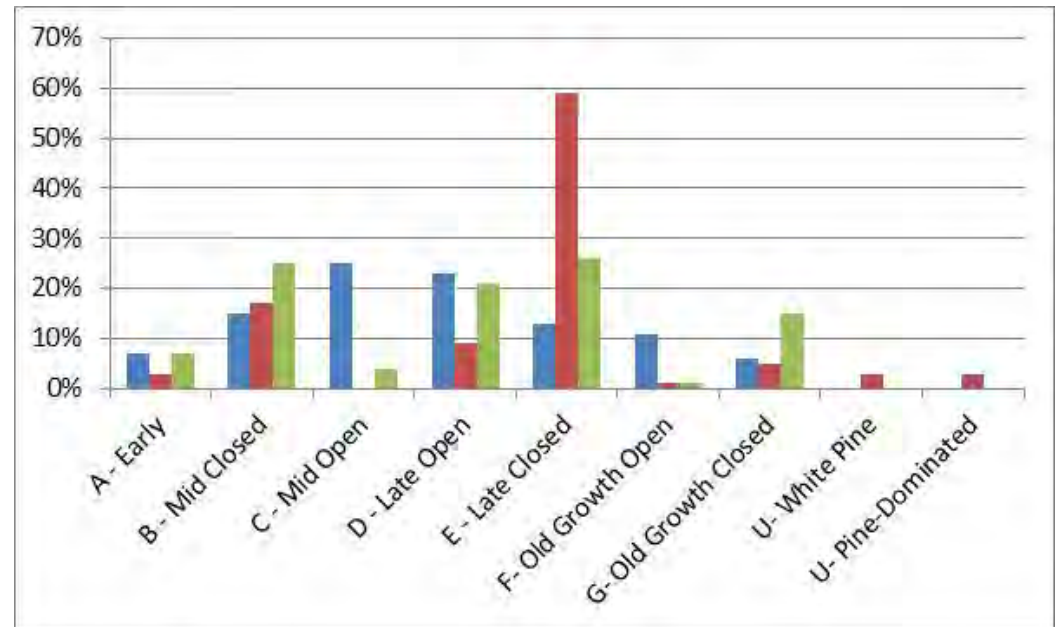
# Cherokee National Forest Landscape Restoration Initiative



Dry Oak

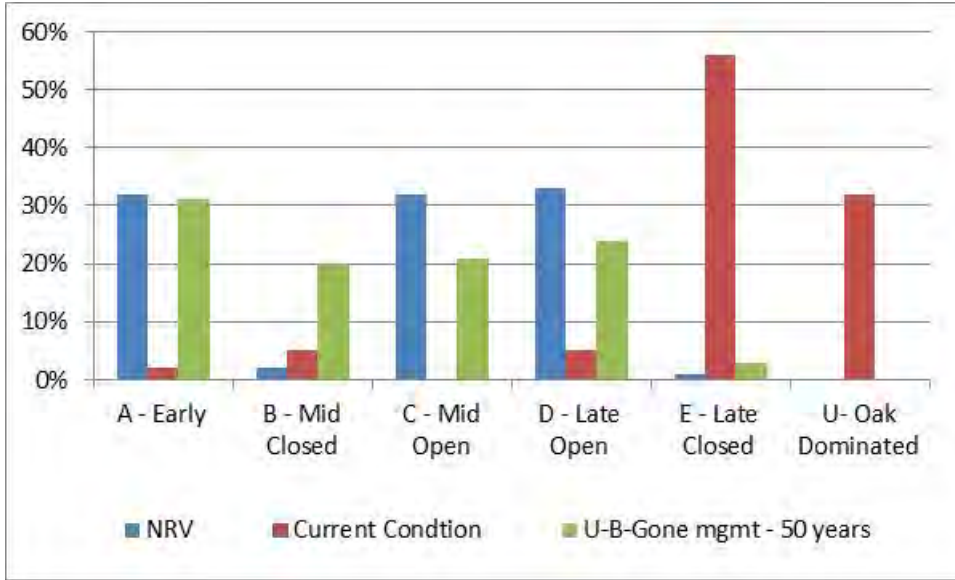


Dry-Mesic Oak



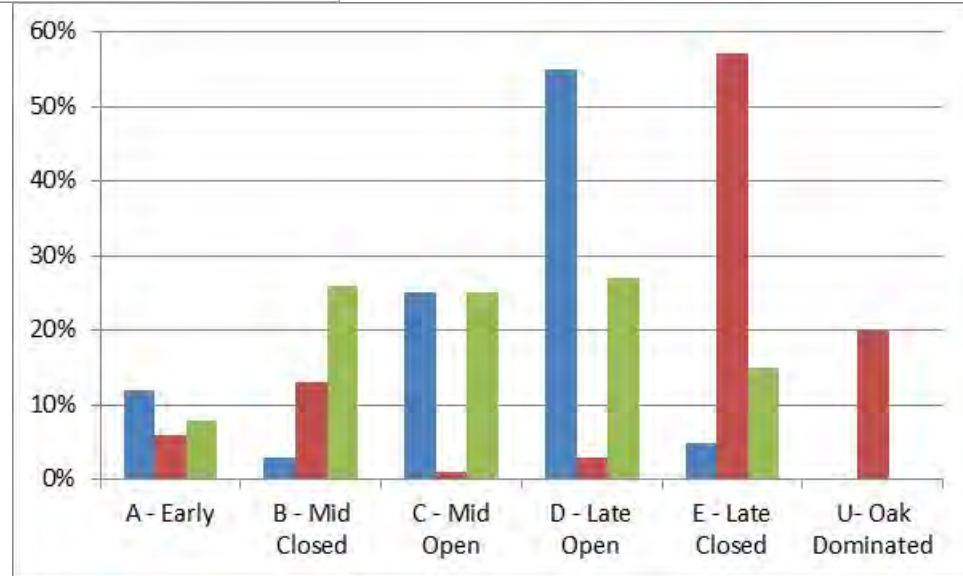
# Cherokee National Forest Landscape Restoration Initiative

## Pine Forests & Woodland



Low Elevation Pine

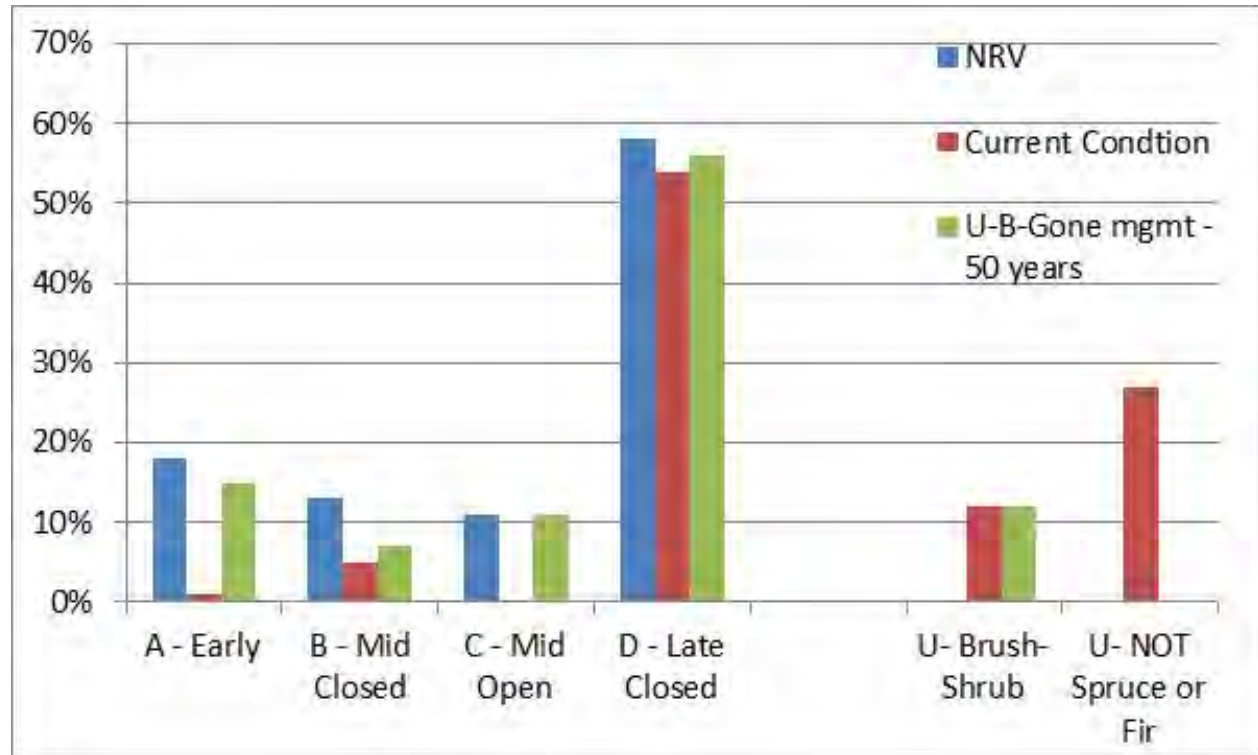
Montane Pine





# Cherokee National Forest Landscape Restoration Initiative

## Spruce-Fir Forest



# Cherokee National Forest Landscape Restoration Initiative



## Old Growth Model Run Requests

## 20 Year Results Summary

- 
- Continued same treatment mix with adjustments
    - Cove: Harvest in age 80-99 mid-closed vs. late-closed
    - Dry-Mesic Oak & Montane Oak: No harvest in last 10 years of late-closed
  - Increased old growth after 20 years
    - 2% more in Montane Oak
    - 1% more in Dry-Mesic Oak & Cove