

# Michaux Trails: Towards a Future We Want





*There is pleasure in the pathless woods*

*There is rapture on the lonely shore*

*There is society where none intrudes*

*By deep sea, and music in its*

*roar;*

*I love not man the less, but Nature*

*more,*

*From these our interviews. . . .*

Lord Byron

*Childe Harold's Pilgrimage*



*One must be moved, but  
one needs to be moved in  
the right direction, where  
“right” means with  
appropriate appreciation of  
what is actually going on.”*

Holmes Rolston III, “Aesthetics  
and the Forest Experience”





“

Ecosystems bind life up into discrete individuals and cast them forth to make a way resourcefully through their environment. . . .The picture we need. . . is of community that packages everything up into individual lives and binds them together loosely (that is, freely) enough that individuals remain gems in a setting, yet tightly enough that the generating, maintaining system is prior to individual life.

**Holmes Rolston**

***“Duties to Ecosystems”***



# Overview

- Part 1: Michaux Trails in Context
  - Demographic and Landscape
  - Baselining a complex trail system (some noodles worth noting)
  - Launching points towards better trails
- Part 2: The Importance of [Michaux] Trails
  - Trails as Indicators
  - Trails as Structural Opportunities for Adaptive Management and Intercessory Action
  - Next Steps





## Population per Square Mile of SFL, Land Mass over 50000 Acres

Wednesday, January 06, 2016

1:17:18 PM

DistrictNumber	DistrictName	Notes	Buffer of 10 Miles	Buffer of 20 Miles	Buffer of 30 Miles	Buffer of 40 Miles	Buffer of 50 Miles	Buffer of 60 Miles
1	Michaux	District 1	2437	6598	15180	23198	33490	60654
3	Tuscarora	District 3	891	4036	9446	17911	27016	37734
7	Bald Eagle	Districts 5, 7, and 12	1030	1641	2187	3108	5433	7100
10	Sprout	Districts 8, 10, 12, 13, 15, and 16	122	311	492	779	1035	1417

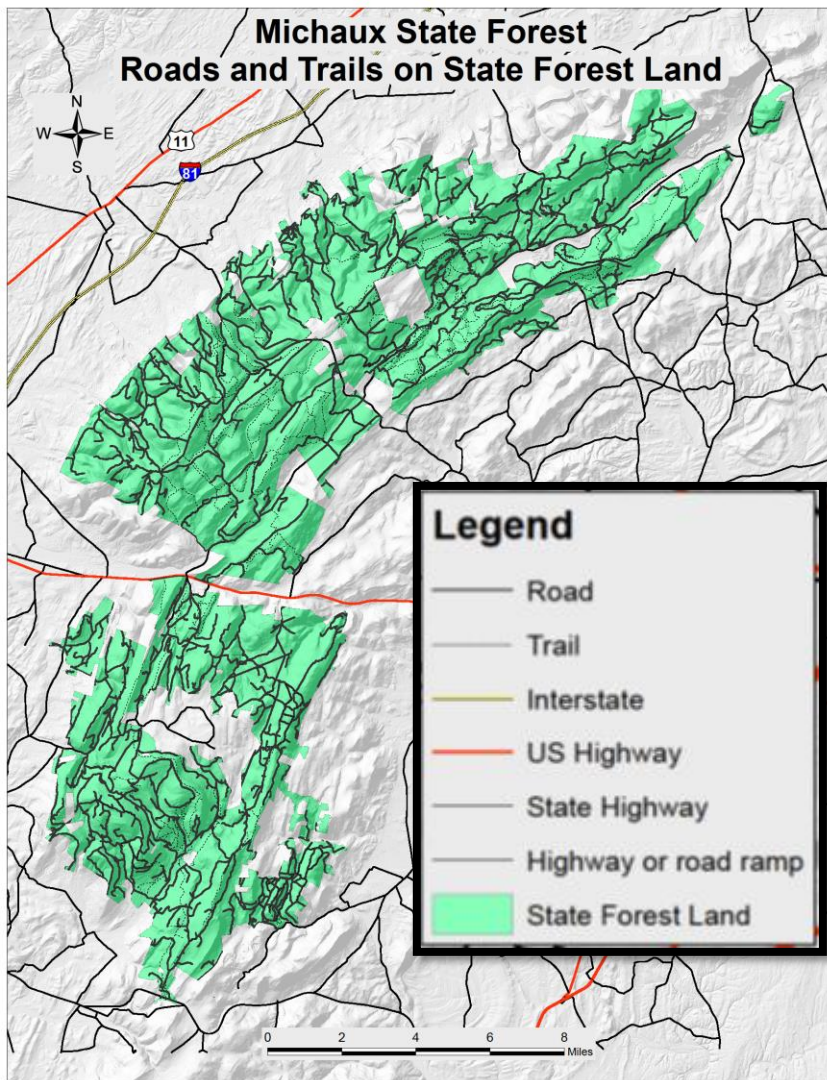








# Michaux State Forest Roads and Trails on State Forest Land





# Michaux State Forest Roads and Trails on State Forest Land



11

81

15

## Legend

- Road
- Trail
- Interstate
- US Highway
- State Highway
- Highway or road ramp
- State Forest Land

0 2 4 6 8 Miles

# Michaux State Forest Rides of Single Mountain Biker on State Forest Land



11

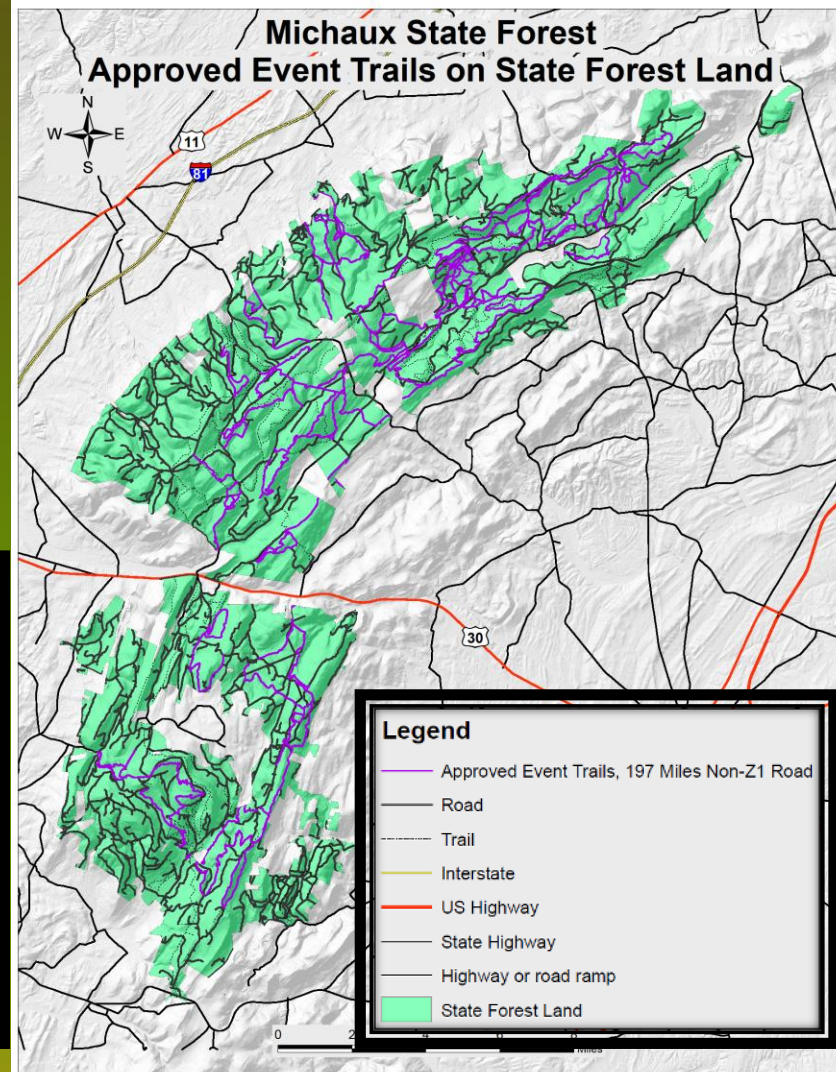
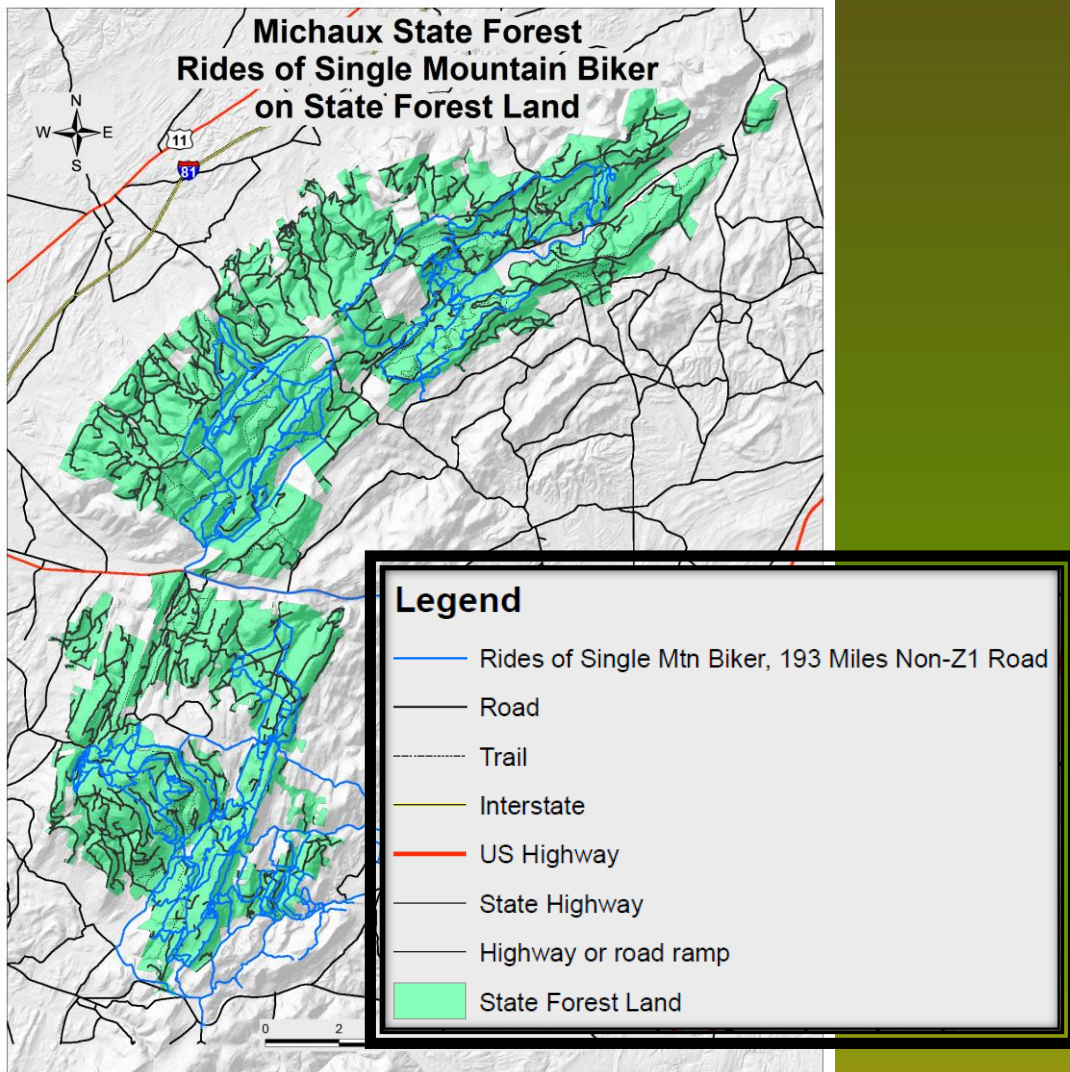
81

## Legend

- Rides of Single Mtn Biker, 193 Miles Non-Z1 Road
- Road
- Trail
- Interstate
- US Highway
- State Highway
- Highway or road ramp
- State Forest Land

0 2 4 6 8 Miles







# Michaux State Forest Composite of All Trails and Rides on State Forest Land

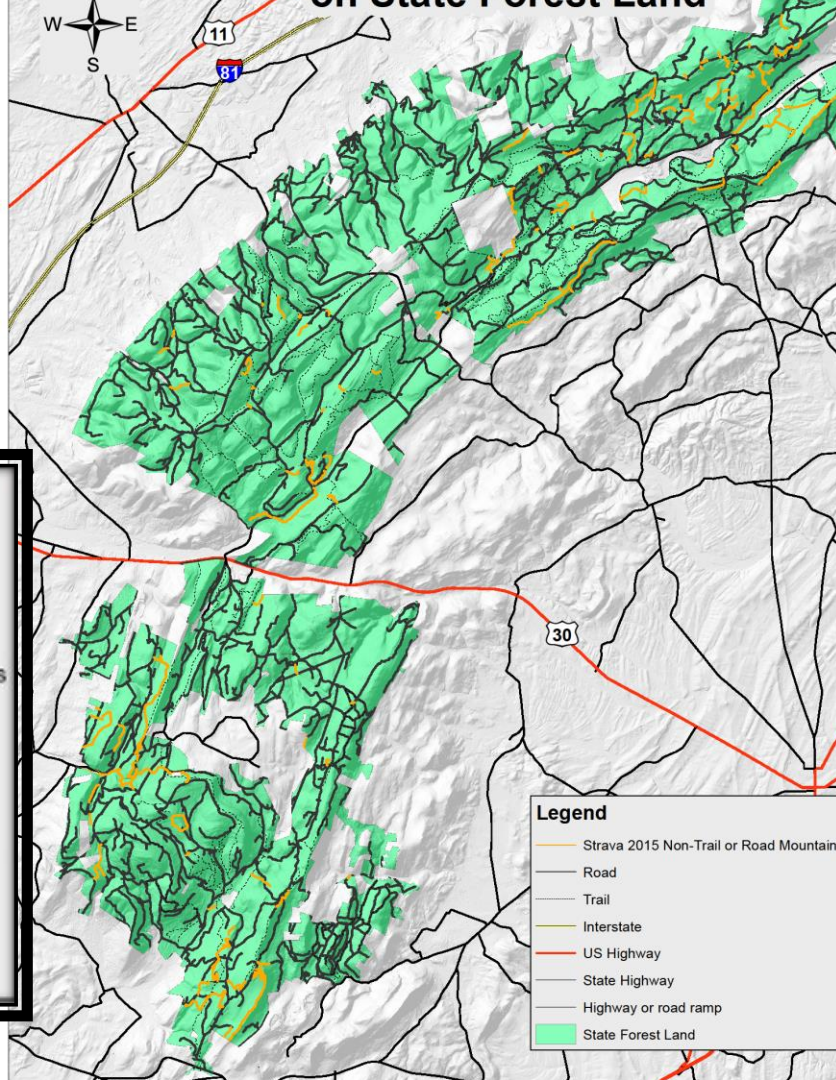


11  
81

## Legend

- Rides of Single Mtn Biker, 193 Miles Non-Z1 Road
- Approved Event Trails, 197 Miles Non-Z1 Road
- Approved Trails, 201 Miles Non-Z1 Road
- Strava 2015 Non-Trail or Road Mountain Bike Usage, 66 Miles
- Road
- Trail
- Interstate
- US Highway
- State Highway
- Highway or road ramp
- State Forest Land

0 2 4 6 8 Miles

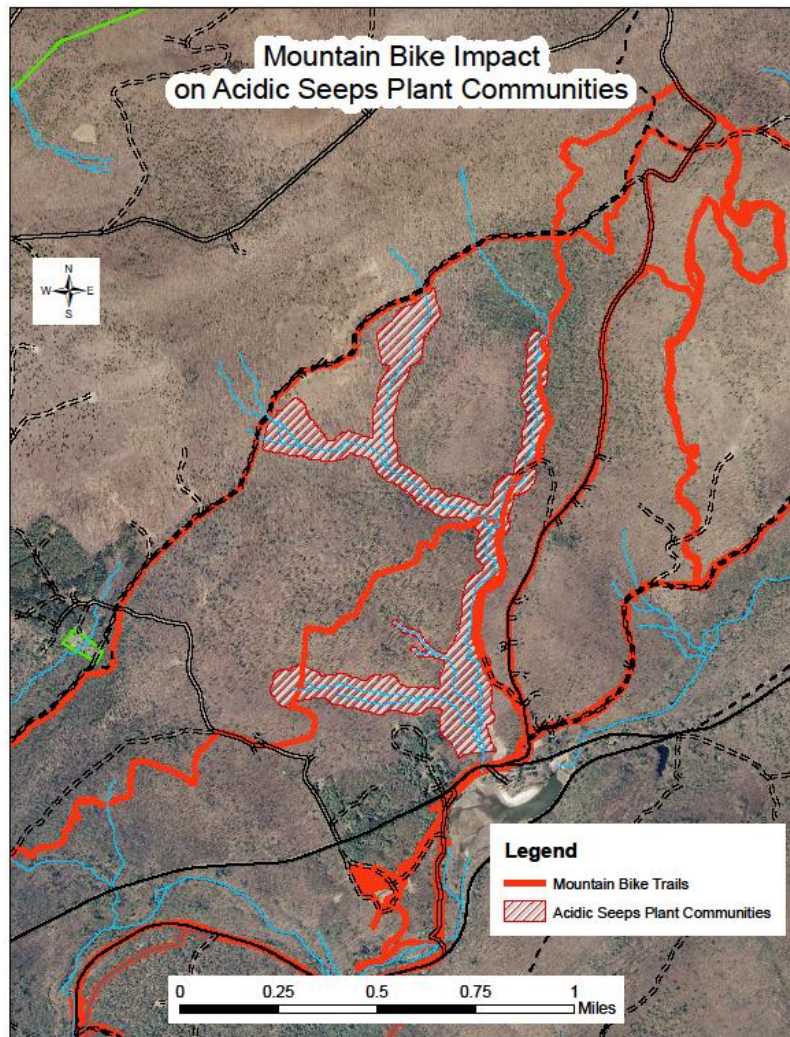


## Legend

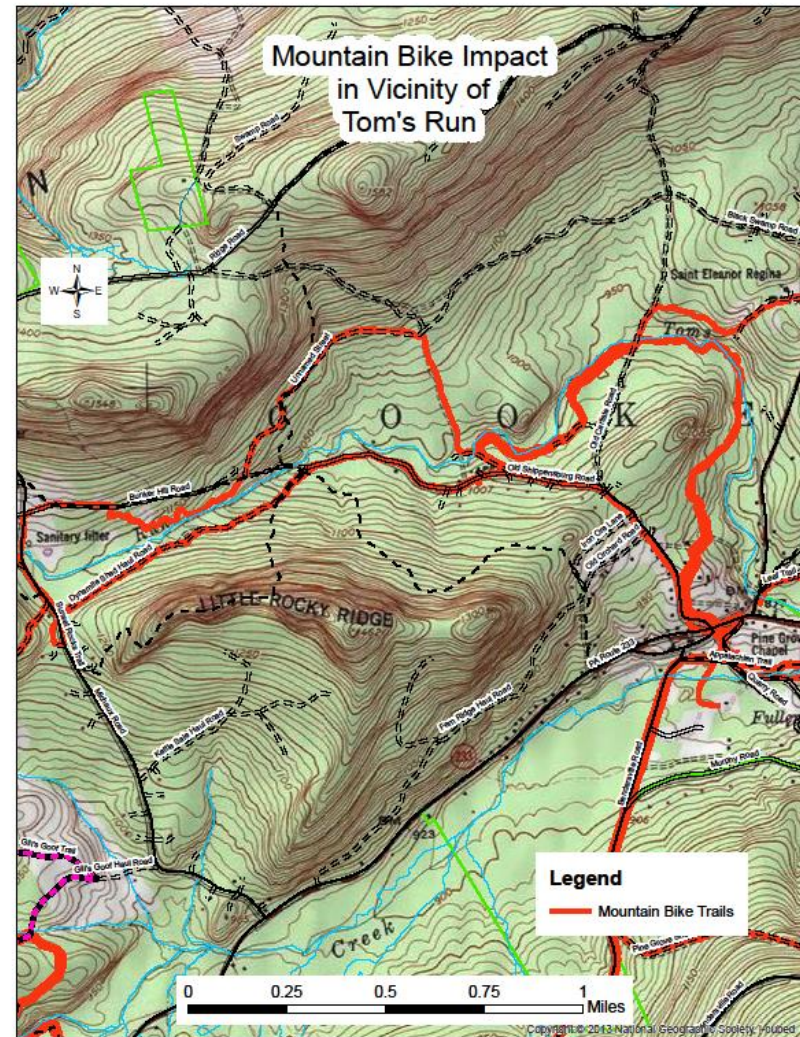
- Strava 2015 Non-Trail or Road Mountain Bike Usage
- Road
- Trail
- Interstate
- US Highway
- State Highway
- Highway or road ramp
- State Forest Land



# Mountain Bike Impact on Acidic Seeps Plant Communities

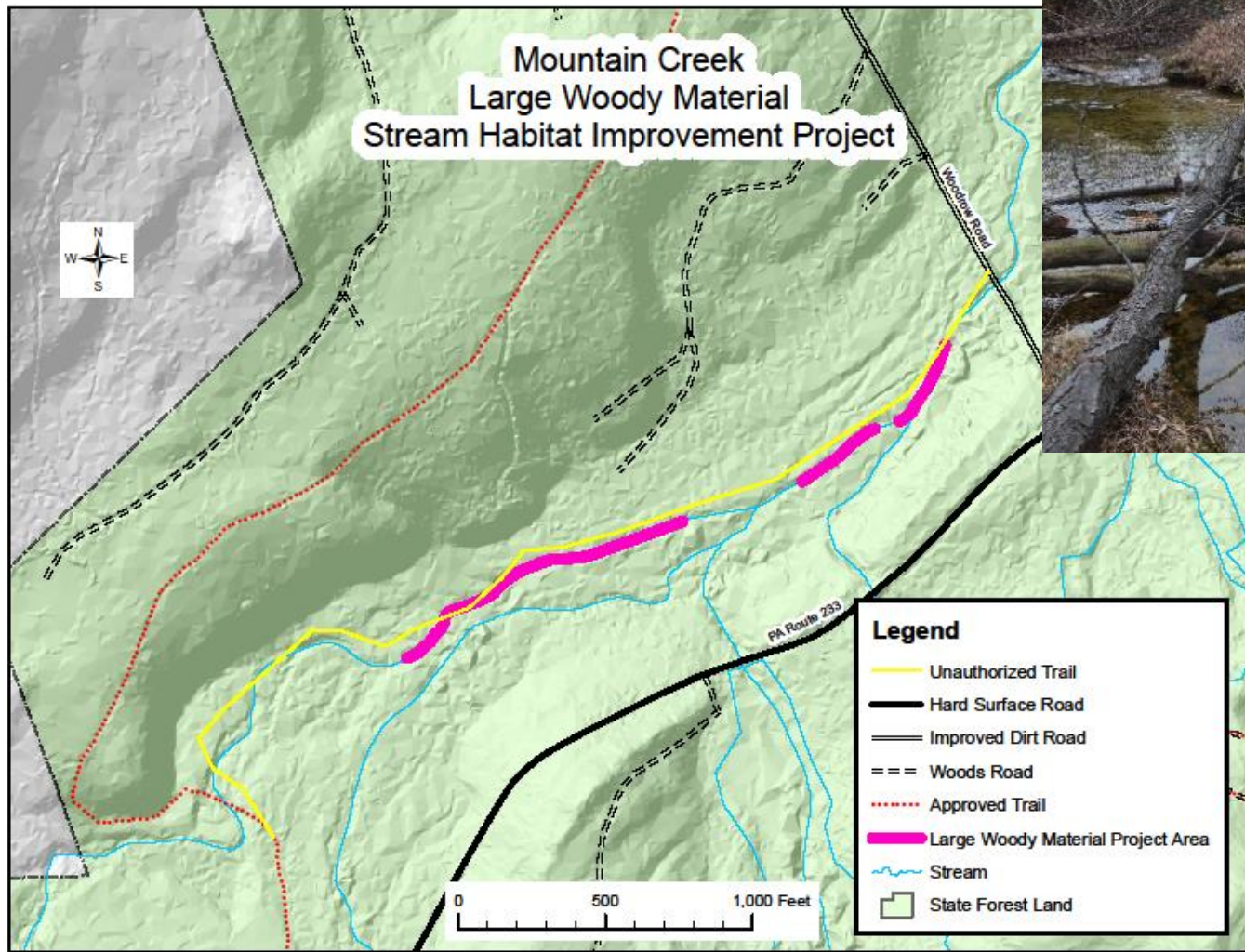


# Mountain Bike Impact in Vicinity of Tom's Run





# Mountain Creek Large Woody Material Stream Habitat Improvement Project



## Michaux Forest District Goals (pp. 50-51)

1. Diversify the age class structure, diversity, and resilience of the forest
2. Sustain and restore eco-regionally significant plants, forest types and custodial wildlife species
3. Provide sustainable and high quality trail and forest use experiences within the Michaux
4. Develop the District's Capacity and Preparedness in Fire Suppression and Management
5. Provide outreach and education opportunities that engage others in sustaining forests within the district



# Michaux State Forest

Special Resource Management Zones






## Legend

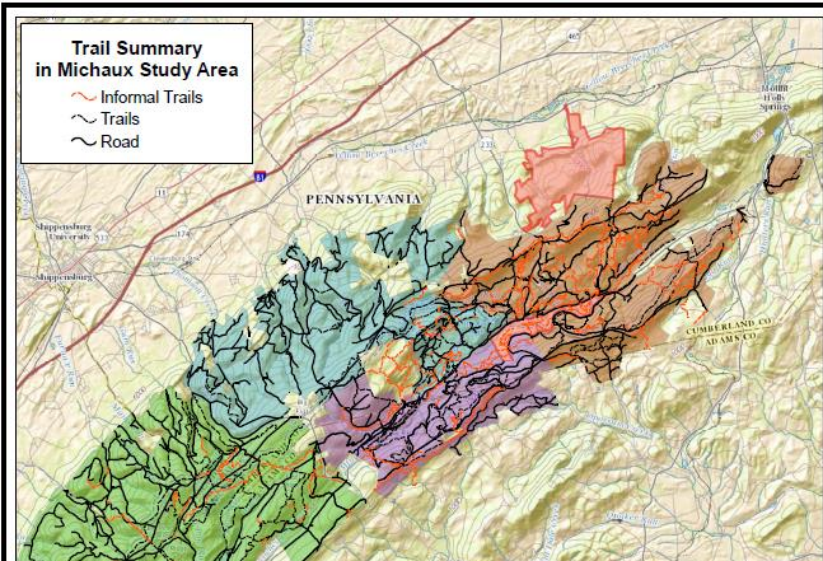
- Contour 1800 Ft. Elevation
- Big Pine Flats Biological Diversity Area
- Site 3
- Smoky Hole Special Resource Management Area
- Delineated Riparian Zones Clipped to SFL
- Streamside Forest Zone LMUs
- Streamside Special Resource Management Area
- State Forest Land

0 2 4 6 8 Miles

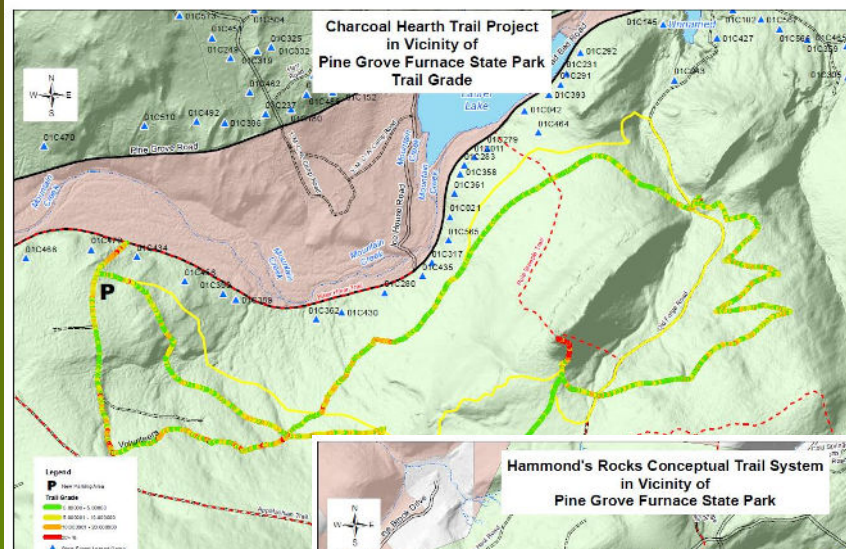


## Trail Summary in Michaux Study Area

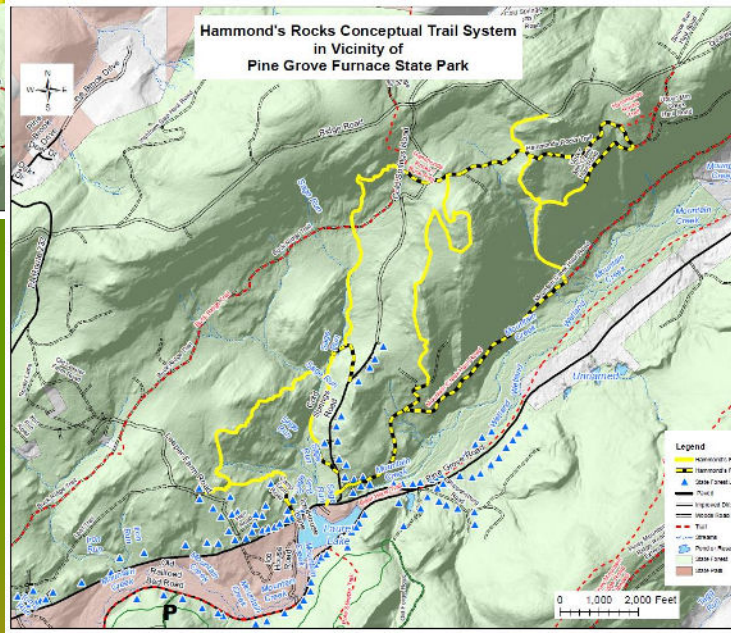
-  Informal Trails
-  Trails
-  Road



## Charcoal Hearth Trail Project in Vicinity of Pine Grove Furnace State Park Trail Grade



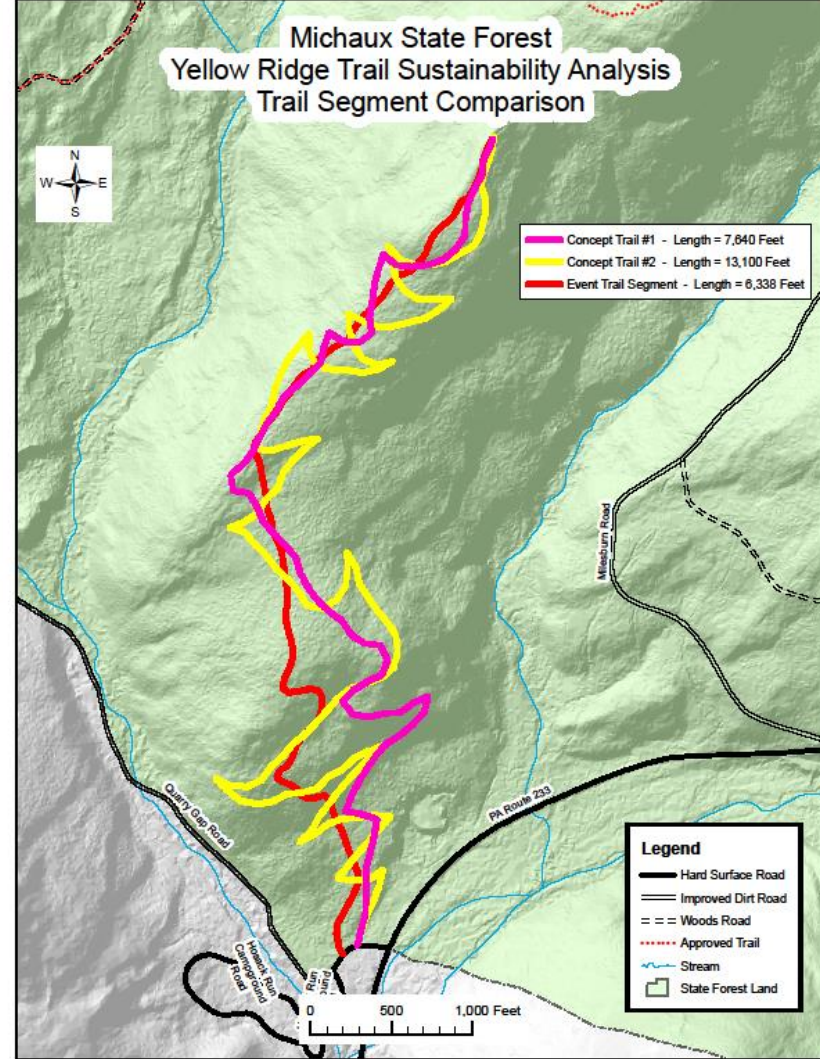
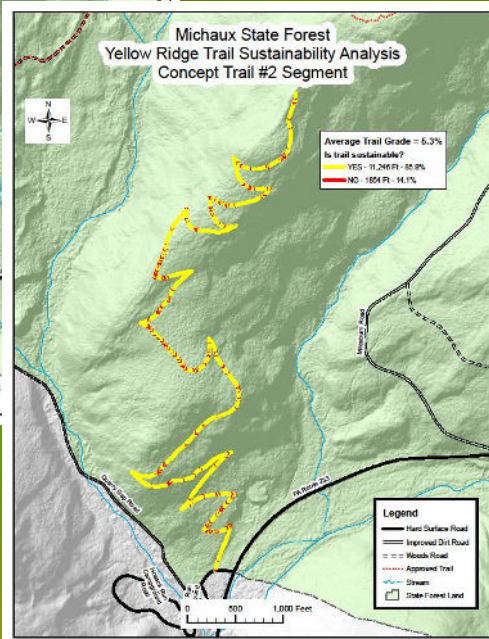
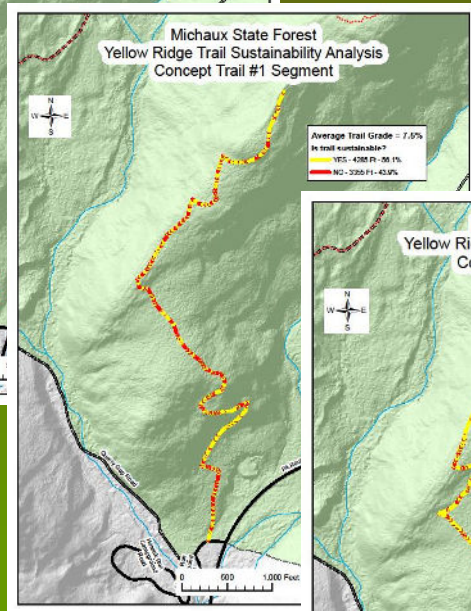
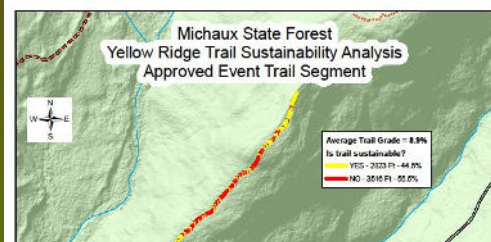
## Hammond's Rocks Conceptual Trail System in Vicinity of Pine Grove Furnace State Park



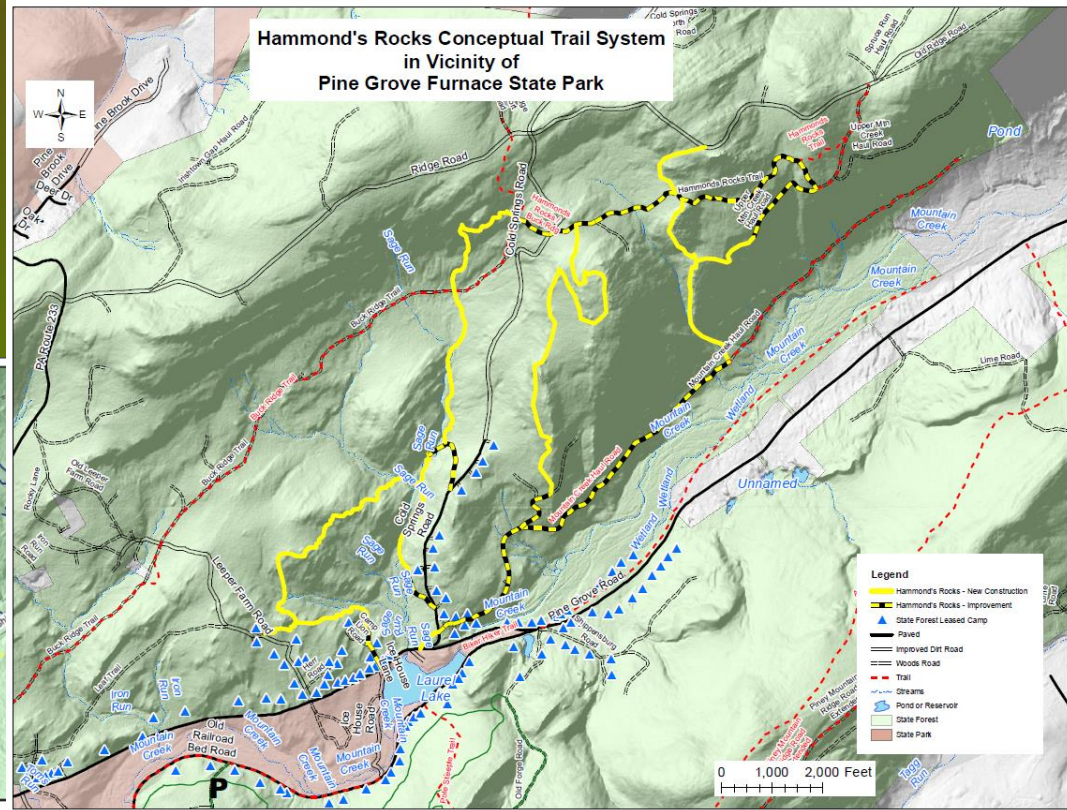
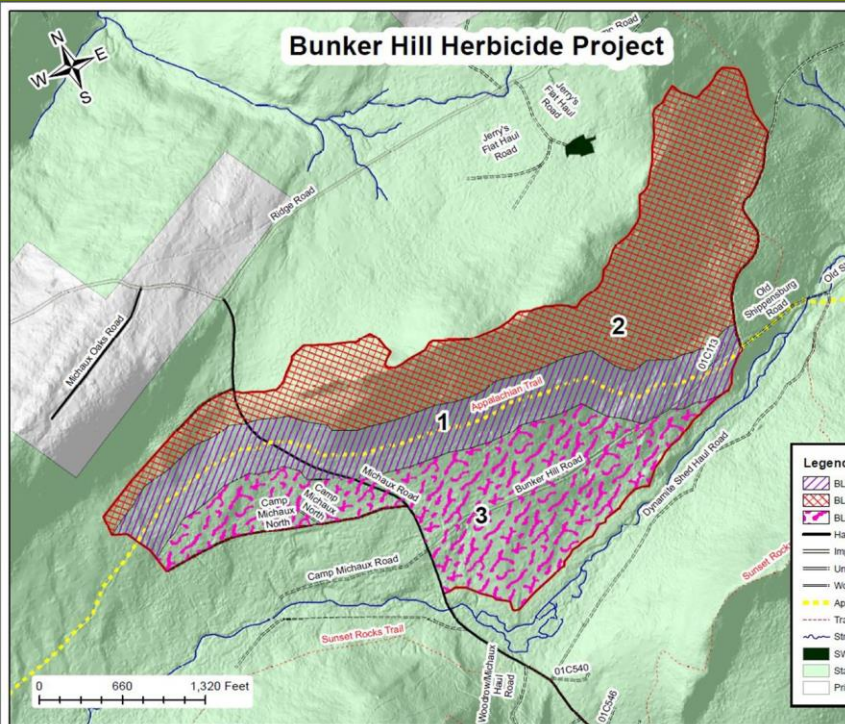
Zone	Acres	Density Feet/Acre		
		Formal	Informal	All
Flat Rock	21,940	12.42	6.49	18.91
North Central	13,028	9.02	4.19	13.21
ATV Trails	6,691	21.41	14.82	36.23
Hammonds Rock Vista	13,765	7.86	19.38	27.24
Overall	55,424	11.57	10.16	21.73

Trail Summary					
Zone	Miles			%	
	Formal	Informal	All	Formal	Informal
Flat Rock	51.6	27.0	78.6	66%	34%
North Central	22.3	10.3	32.6	68%	32%
ATV Trails	27.1	18.8	45.9	59%	41%
Hammonds Rock Vista	20.5	50.5	71.0	29%	71%
Overall	121.5	106.6	228.1	53%	47%







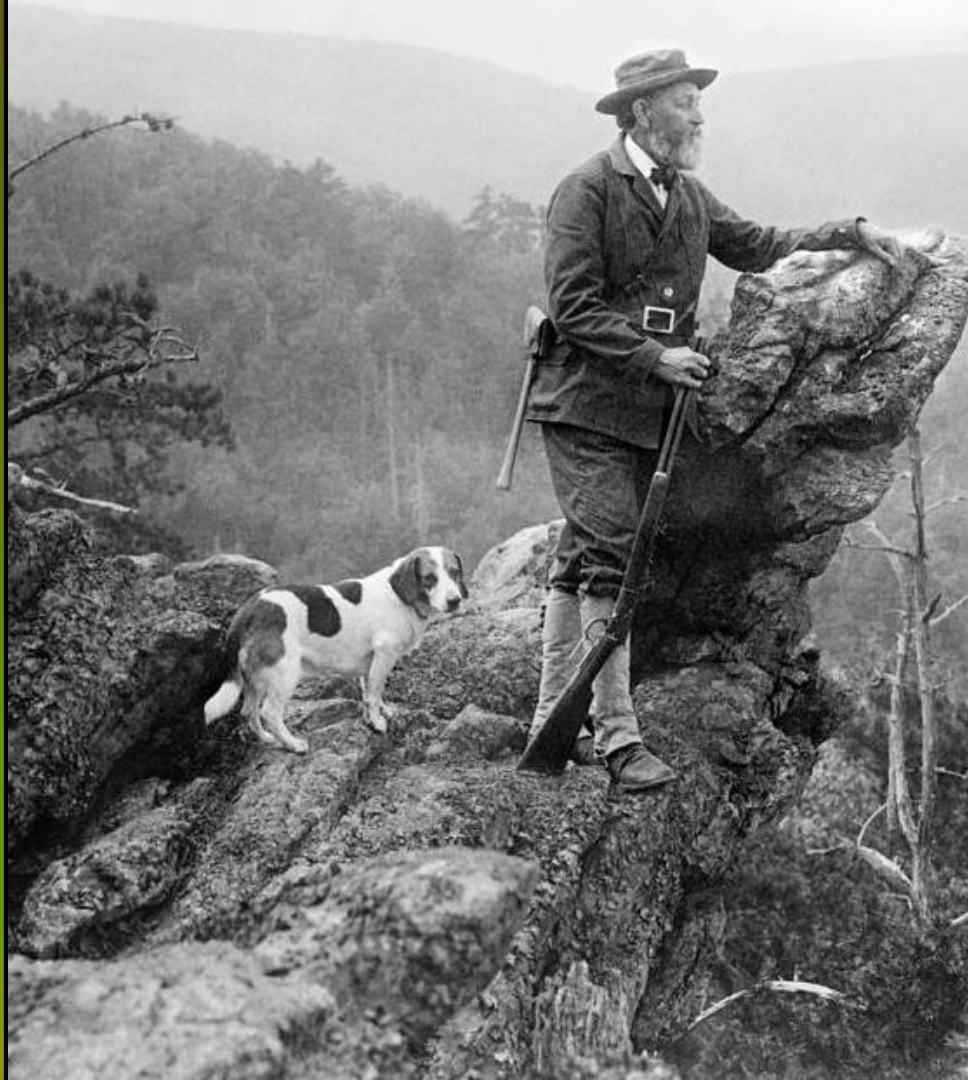






# Part 2: The Importance of [Michaux] Trails

What is a “Good” Trail?









# DESIRED FUTURE CONDITIONS

STABLE, PROFITABLE, AND DIVERSE INDUSTRY

CULTURAL VALUE FOR WORKING FORESTS AT STATE AND LOCAL GOVERNMENT LEVEL

STRONG CIVIC SUPPORT FOR STEWARDSHIP, OUTDOOR RECREATION, AND FOREST-

BASED ENTREPRENEURSHIP

ABATING CARBON EMISSIONS

CO2 NEUTRALITY

STABILIZED WILDLIFE AND PLANT ECOLOGY VALUED BY SOCIETY

ECOLOGICALLY AND CULTURALLY DIVERSE, LIVABLE URBAN AND RURAL COMMUNITIES

BROAD BASED CULTURAL STEWARDSHIP AND COMMUNITY ETHIC

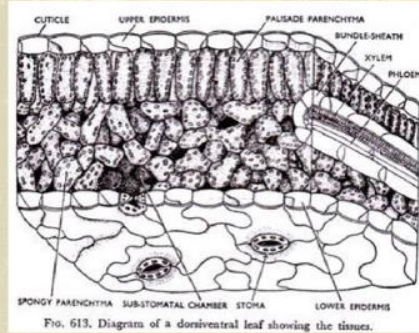
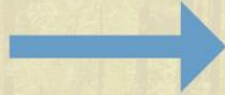


# CHANGE DRIVERS

- Reduced Base Flows
- Warmer stream temps
- Shorter vernal pond fill
- Regulations
- Fragmentation
- Parcelization
- Development
- Invasive species
- Global Market Competition
- Global Market Opportunity
- Increased tree mortality
- Lower quality wood
- Herbicide resistance

- Hotter Hots
- Wetter Wets
- Drier Dries
- Insurance Premium Increases
- Bond rate decreases
- Demographic Shifts from Coasts
- Demographic Shifts from SW
- Increased fire intensity
- Species range migration
- Species extirpation
- Species Extinction

**FUTURE  
CONDITIONS**  
vs  
**DESIRED  
FUTURE  
CONDITIONS**



**FEEDBACK  
PATHWAY  
"OUTCOMES"**





A photograph of a forest floor covered in numerous small, light-colored mushrooms with gills, growing on a bed of moss and fallen pine needles. The background shows blurred tree trunks and green foliage.

“

... since ecosystems are rarely delineated by ownership boundaries, the effectiveness of ecosystem management is dependent on cooperative efforts.

**PENNS WOODS STRATEGIC PLAN**



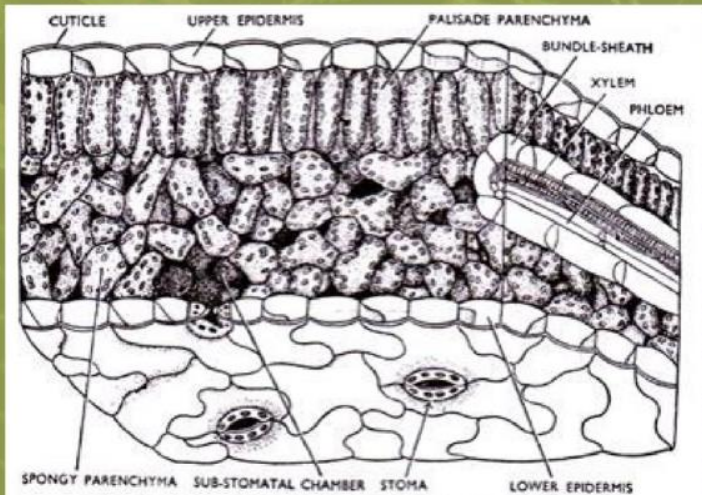


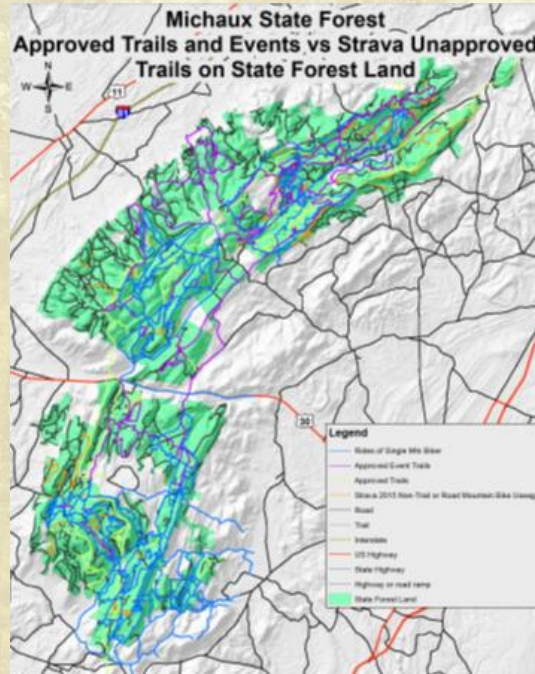
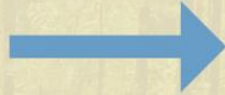
FIG. 613. Diagram of a dorsiventral leaf showing the tissues.

“

Intercession visualizes an alternative future to the one apparently fated by the momentum of current contradictory forces. It infuses the air of a time yet to be into the suffocating atmosphere of the present. . .

WALTER WINK, 1993





FEEDBACK  
PATHWAY  
"OUTCOMES"



# STATE FOREST PUBLIC MEETING

## WHEN

**January 30, 2019**  
**6:30 PM**

## WHERE

**Norio Park Community Center**  
3050 Lincoln Way East, Fayetteville, PA 17222

Meet with a representative of the Pennsylvania Parks & Forests Foundation and find out how a "friends group" can benefit the forest. Help us:

- Plan the future of Michaux State Forest
- Organize events
- Raise money
- Maintain trails and public spaces
- Make Michaux State Forest the center for southcentral Pennsylvania outdoor recreation

For additional information, contact:

**Matt Puchalsky, Forester | 717.352.2211**

**LOOKING FOR  
A WAY TO  
IMPACT THE  
FUTURE OF  
YOUR  
COMMUNITY?**

**We have the  
answer!**

**Come to an  
informational  
meeting on  
formation of  
the Friends of  
Michaux  
State Forest**



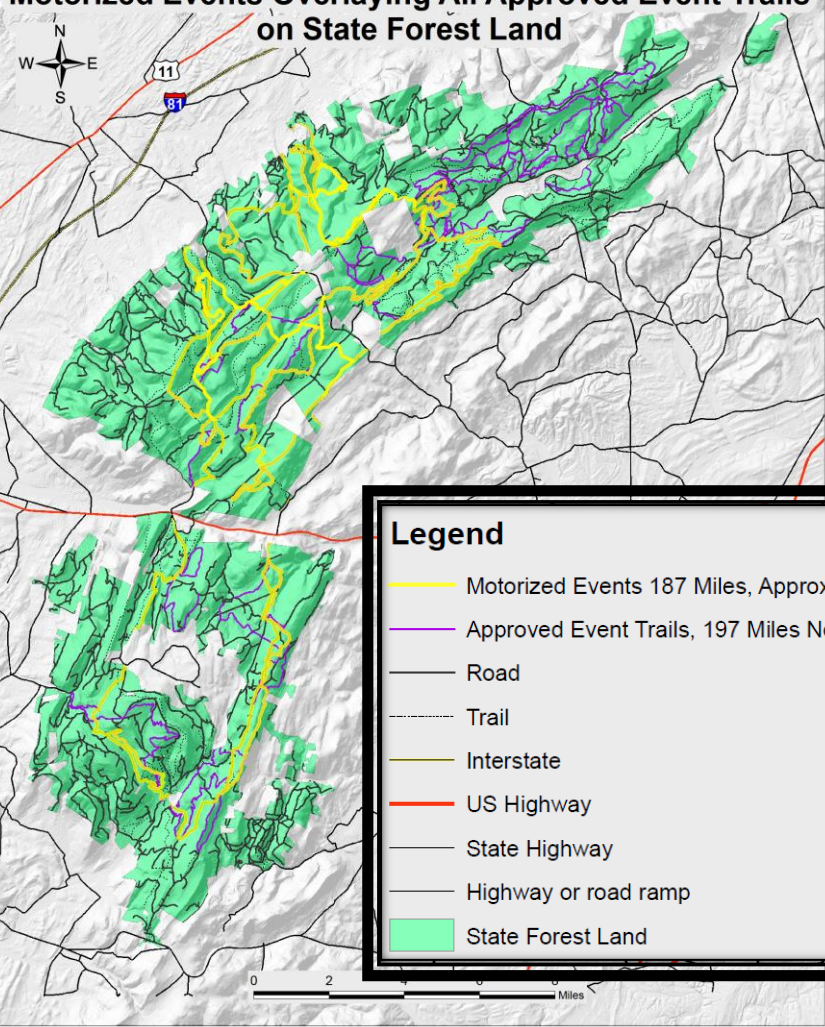


THANK YOU  
**QUESTIONS?**



# Michaux State Forest

## Motorized Events Overlaying All Approved Event Trails on State Forest Land



### Legend

- Motorized Events 187 Miles, Approx. 110 Miles Non-Z1 Road
- Approved Event Trails, 197 Miles Non-Z1 Road
- Road
- Trail
- Interstate
- US Highway
- State Highway
- Highway or road ramp
- State Forest Land





# Michaux Forest District

## Priority Habitat Areas and Initiatives

### **Pitch Pine/Scrub Oak Barren's restoration**

Dead Woman Hollow/Big Pine Flats

### **Site 3 Commercial/non-commercial fire mediated habitat treatments**

Spruce Run/Hammond's Rocks Vista Sale

Hairy Spring's Planned Burn Project

### **Stream, Vernal Pond, and Grouse Micro-site Management**

Mountain Creek and Conodoguinet Large Woody Materials Project

Edge/nesting habitat around Special Wildlife Management Areas

### **Plant Propagation and Assisted Colonization/Reintroduction Efforts**

Lupine, Short leaf pine, Allegheny chinquapin, Orchid spp.,

### **Shared Use Trail System Redesign**

Implementation of Michaux Trail Assessment report

Conceptual Trail loop initiatives designed/implemented

Staff and Volunteer Trail Stewardship Capacity building

### **Learning Landscapes Initiatives**

Camp Michaux

Strawberry Hill/Glatfelter



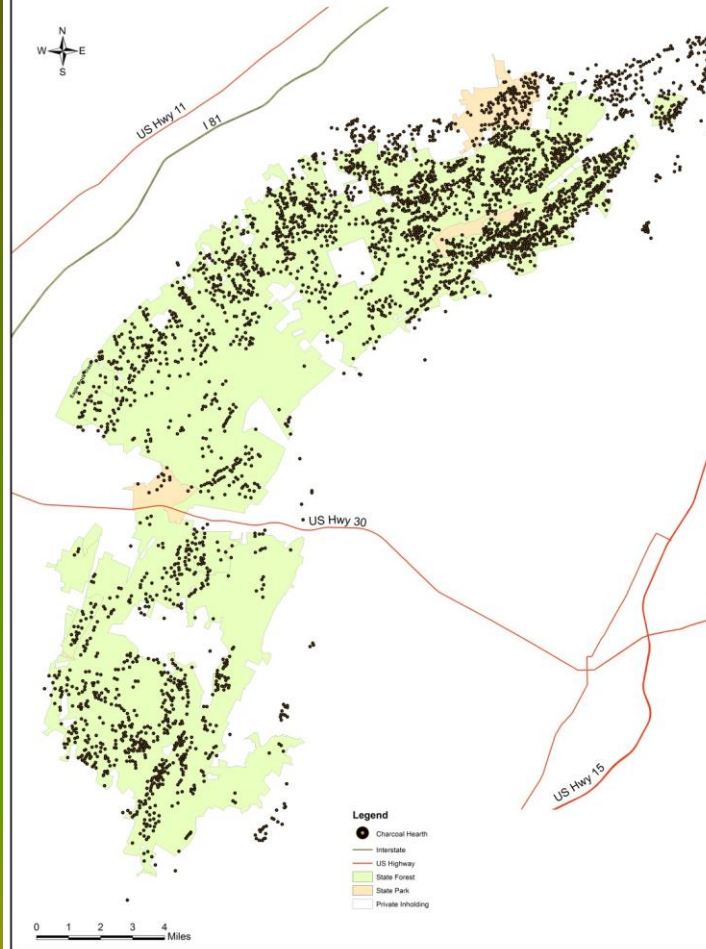
## Part 2: Context. Michaux Chronology

- Pre-European Settlement (10,000 years ago – 1550 AD)
- Early Settlement (1600s-1750)
- Industrial Era Land Use 1750-1900)
- Forest Conservation (Rest/Regrowth/Regulated Harvest/Recreation Happens) 1900-2000
- **Today (Transition to “Ecosystem Management”) 2000-??**

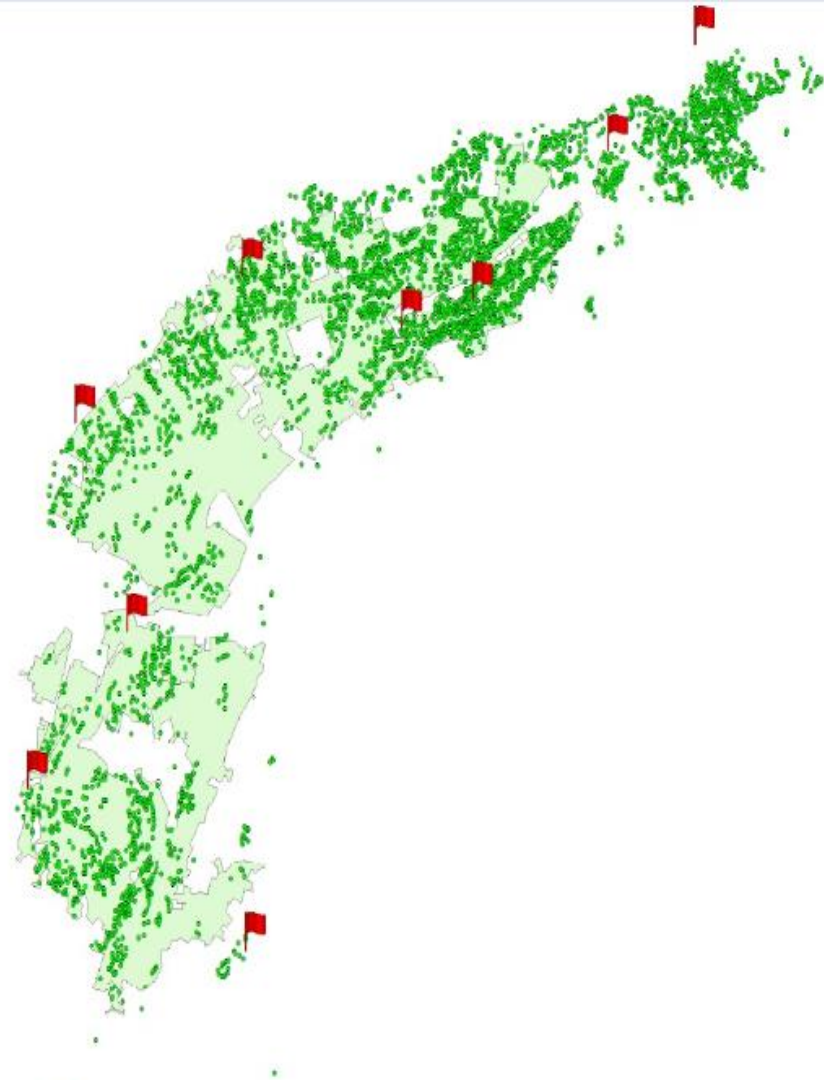


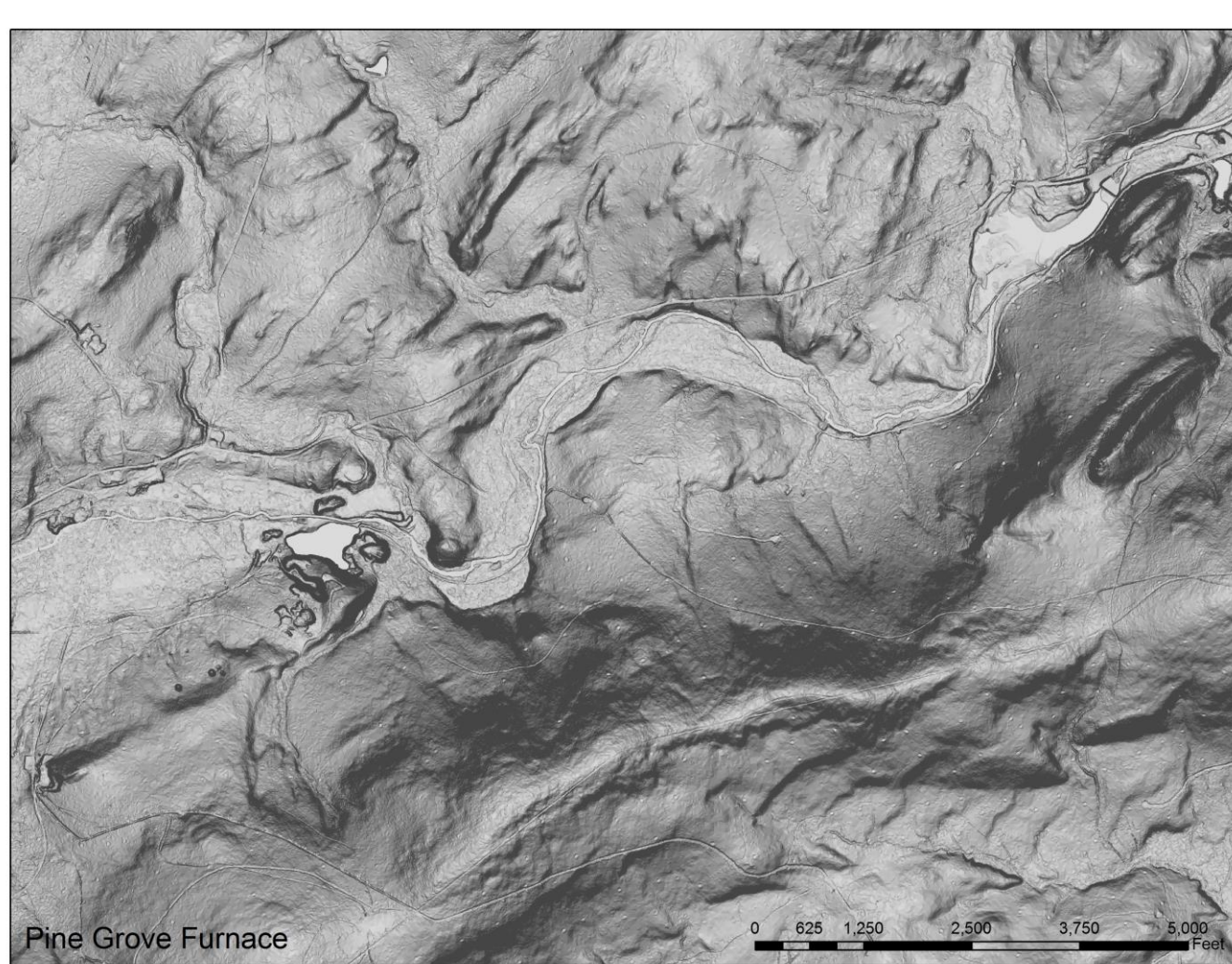
(Cultural Landscape Assessment)

# Michaux State Forest Charcoal Hearths Across the Forest









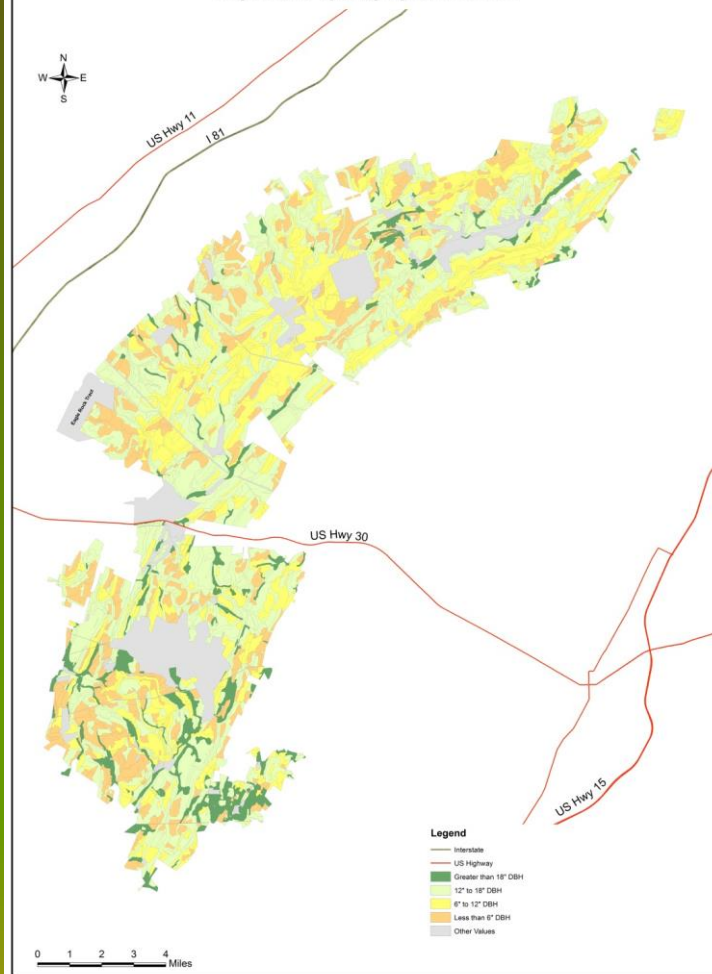
Pine Grove Furnace



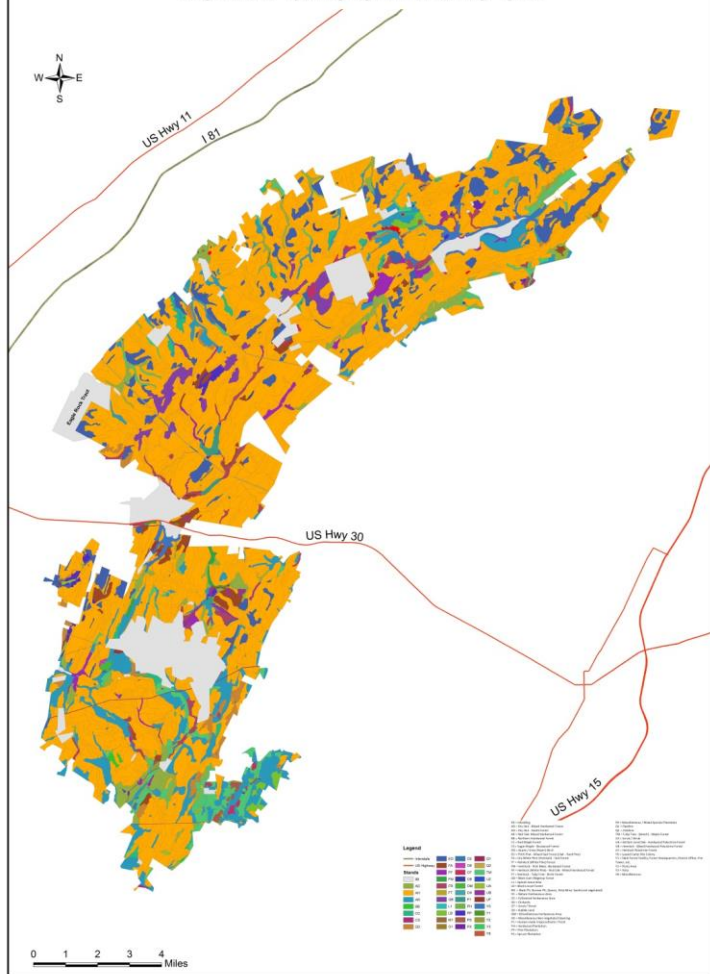




# Michaux State Forest Habitat Tour Vegetative Typing by Size Class

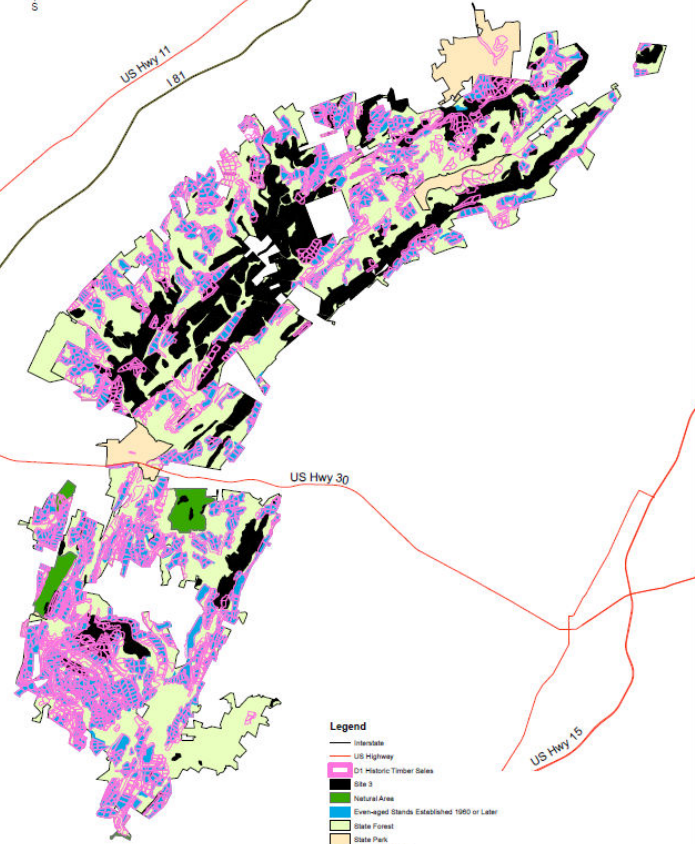


# Michaux State Forest Habitat Tour Vegetative Typing by Community Type





Michaux State Forest  
A Management System  
for  
Attaining EcoRegional Goals



Legend

- Interstate
- US Highway
- 21st-century Timber Sales
- State 3
- Natural Area
- Even-aged Stands Established 1990 or Later
- State Forest
- State Park
- Private Inholding

0 1 2 3 4 Miles

Event Trails  
with Motorized  
Highlighted



- . . . the miracle of Earth is that nature decorates this geomorphology with life. Trees evoke this genesis and biological power: Eden with its tree of life, or the shoot growing out of the stump of Jesse, or the cedars of Lebanon – again and again there is life’s transient beauty sustained over chaos, life persisting in the midst of its perpetual perishing. A visit to a forest contributes to the human sense of place in space and time, of duration, antiquity, continuity. There one encounters ‘the types and symbols of Eternity’(Wordsworth)”
- Holmes Rolston III “Aesthetics and the Forest Experience”

. . . Those who can count the needle fascicles and get the species right, if they never experience goose pimples when the wind whips through the pines, fail as much as do the poets in their naïve romanticism.

Nevertheless, only when moving through the science to the deeper aesthetic experiences that are enriched by science can the forest be most adequately known. Aestheticians are often not comfortable with this; they want to insist on human capacities to confront nature in relative independence of science. *One must be moved, but one needs to be moved in the right direction, where “right” means with appropriate appreciation of what is actually going on.*”

Holmes Rolston III, “Aesthetics and the Forest Experience”



# Constraints

Policies based on untested or evidence based assumptions – Ex: Negative Signage Policy, Rec forest constraints on timber sale size, Organized/large event approval process

Decision making and prioritization

Direct and Opportunity Costs of Administrative Burden (Administrative Carrying Capacity – both centralized and district roles)

State of the Disciplines

Lack of *Trans-disciplinary* Coherence among Forestry and Trail/Rec professionals. (Certification?)



Roy Brubaker

Trails on the Michaux



TEND OUR  
RESOURCES AS GIFTS

INVITE THE  
COMMONWEALTH TO  
PARTICIPATE

WORK DESIRED  
FUTURE CONDITIONS  
INTO BEING



THANK YOU

**QUESTIONS?**





THANK YOU  
**QUESTIONS?**