Title Slide

Michaux Trails: Towards a Future We Want

Introduction

Good afternoon. I changed the title of this talk at the last minute to capture the importance this topic holds for the forest right now. However, I must also acknowledge I am not the avid user of Michaux's trails many of you are.

Slide 1: Wilderness Shot with Byron Quote

When we do go hiking, my family frequently objects to my trail behavior:

"Why can't you stay on the trail like a normal person?"

I used to quote Lord Byron: "There is pleasure in the pathless woods."

Slide 2: Orchids with quote from Holme

After 8 years of working on the Michaux my trail behavior has grown worse, but my justification is more honest:

Ecology leads me elsewhere.

Suffice it to say, the forest grabs me more than its trails. The forest makes the difference. It's why I'm a forester.

Slide 3: Ecosystems Structure and Freedom quote from Rolston

But it took the Michaux to teach me Lord Byron didn't spend much time in forests or didn't pay attention when he did.

Of course there's no such thing as a pathless forest.

Trails are ecological givens in terrestrial eco-systems like forests. They link habitats and habitat users and are as indispensable as food webs and mycelial networks.

We Foresters need to turn Byron on his head and begin asking with all seriousness:

If it *doesn't* have paths through it, *is* it a forest? Is it a *healthy* forest?

Will it *be* a forest much longer?

Where there are no paths, does our pleasure start to kill?

I'm not sure if that's epiphany or apostacy coming from a forester. But such questions pursue me now with an inescapable logic.

So thank you for coming today. And thank you to the organizers of this event for the invitation to speak.

Slide 4: Overview: PART 1 Michaux Trails in Context, PART 2: The Importance of Good trails

I'd like to take this opportunity to introduce our Recreation forester Matt Puchalsky who is here with me today. If you haven't already, please stop by and talk to Matt and look at the additional information about Michaux trails at our display.

I've divided my talk into two parts. The first to give you a general context on the most dynamic aspects of our current trail system and some positive work we feel will improve both our trail and forest management in coming years. Then I will risk getting a little philosophical about why trail work on the Michaux is so critical right is now.

Part 1: Michaux Trails in Context:

Slide 5: Aerial view of Michaux within Cumberland Valley

Michaux has the highest density of recreational trails and more trail use than any other state forest.

Most state forests have areas where intensifying use reflects needs for better trail design and management. But on the Michaux, these realities are system wide, and reflect a decades-long phenomenon rooted in this forest's history and demographic context.

Slide 6: Demographic Context Tables Population density around state forest lands >50,000

The reasons for the recreational pressures we face on the Michaux become evident when population densities around state forest lands of 50,000 contiguous acres or more are compared.

With an average population density of just over sixty thousand people per square mile within a sixty-mile radius, the Michaux exists in a landscape teeming with people.

Slide 7: Panned out view of South Mountain from DC/Baltimore metro areas

As such, it attracts the attention of neighbors for whom it is a backyard forest playground, urban dwellers looking for nearby weekend and "stay-cation" getaways, and entrepreneurs keen on the possibilities it provides for organized outdoor recreation business opportunities.

The upshot is that the forest hosts approximately 25% of the organized events approved on the entire state forest system and attracts an estimated 330,000 visitors annually.

Slide 8: Public Use Map

The available trail system that supports all this recreational demand is ***not*** depicted on our public use map which you see here, though it is busy enough just with our "officially designated" road and trail system and places of interest.

I want to prepare you to digest the next several slides of our "real" trail system. . . or should I say, the even *more* complicated part of our trail system which I will be focusing on in my comments. What matters most is the overall visual impact of the following slides. It's what we call our "spaghetti effect." I'll tease out some noodles that illustrate the most important dynamics playing out on Michaux today.

Slide 9: "Public Use" Road and Trail layer and Road miles Table.

This is the most orderly version I can show you of the current Michaux trail system, and it only looks orderly for now because we have muted the grey of the trail symbol. What you are seeing is mostly our public use and gated administrative roads. Under state forest rules and regulations, horseback riding, mountain biking, and hiking are allowable uses on all road or trail surfaces ***not*** posted closed. So technically, these *are* part of our shared use trail system. The muted grey lines on this slide which you can barely see; represent all the known trail surfaces on the Michaux in our GIS layers. I'll be highlighting subsets of this layer in the next slides to illustrate our current understanding of the "real" Michaux trail system being used out there in our ongoing effort to manage this "informal" or "approved because not posted closed" trail system that, for better or worse, supports the lion's share of Michaux's current trail use.

Slide 10: Single Mountain Biker Trails

Several years ago, an avid Michaux mountain biker inadvertently shared with us his individual cache of "rides" on the Michaux. At the time, our impression was that a good number of our local mountain bikers were scratching in and riding new trails at an alarming rate, and we worried that our own cache of "approved because not posted closed" trails only represented a small part of the trail mess being created out there.

So, we expected to find a whole bunch of "spaghetti" beyond what we already knew about in this guy's rides.

Instead, what we found was 193 miles of near perfect correlation with our own existing "sphagetti" layers. And only one or two small incursions onto our hiking trails posted closed to mountain biking.

We surprised. . . and forced to conclude there must be one somewhat ethical mountain biker on the Michaux.

This was a significant turning point for us**.**

I should note I do ride mountain bike myself.

Less now than I used to.

I could never get the hang of running a chainsaw or shooting deer while peddling. . . So for the most part I've gone back to walking in the woods so I can be more useful while there.

Suffice it to say; I have no personal animus towards mountain bikers; though we're still withholding this guy's identity for fear of what his peers might do to him.

Slide 11: Approved Event Trails

Recently, we teased apart a big clump of noodles to gain some administrative efficiencies in our event management. We call them our "approved event trails" and have asked event organizers to limit their trail use requests to some subset of this layer. These were the trails most of them agreed were critical for their events and also minimized user conflict and administrative burden for us.

This only a district level designation, though we have begun sharing these trails with commercial mapping resources such as Purple Lizard maps, and MTB online. Most of them are well known and heavily used by local mountain bikers, trail runners, equestrians, hikers, and hunters. In fact, the 193 miles of our individual mountain biker's rides fall almost perfectly within the 197 total miles of our "Approved for Events" trails. What maintenance is done on this "system" is usually done in conjunction with an event; or spontaneously by users. There are lots of sustainability issues given the lack of design work that went into their creation, and most are moderately to extremely challenging. They thrill our hard-core trail users who have the skill and GPS capability to navigate them, but can be quite frustrating for forest visitors expecting to find a trail "system" to ride on.

Slide 12: STRAVA Analysis

However, we know additional trails are being constructed all the time on the Michaux (and not just by Mountain Bikers!). Responding to requests for enforcement and mitigating the ecological

damage from rogue trails drains already extremely limited staff resources and we would like to put all the energy consumed by this cat and mouse game – ours and the trail builders - into a better trail system for everyone.

So, we're trying to find a useful metric to monitor and measure new trail construction/use at the system level.

It's been a tough nut to crack.

One analysis we've tried is to overlay STRAVA data on our existing trail layers to see how well this broader trail user data set aligned with what we already knew about our "spaghetti." We found roughly 66 miles of STRAVA trails that were distinct from our existing layers (highlighted in orange).

There might be very low (or no!) correlation between these trails and the new trail construction that's going on. But analyzing the STRAVA data on an annual basis together with our day to day responses to reports about rogue trails strongly supports the conclusion that our current trail "system" on the Michaux is largely characterized by a tangle of poorly designed, hard to use, largely unmanaged "forest paths" network; punctuated – one might even say "punctured" -- by an even more problematic – though hopefully much smaller more ephemeral -- "boys digging in the dirt" trail system.

Slide 13: Stream and Sensitive Site Impacts

Our chronic concern about our existing trail baseline is when *either* part of this system negatively impacts sensitive habitat areas or creates conflicts with other uses or management objectives. We always try to immediately stop new trail construction discovered in such areas.

On our established trail network already being heavily used by both spontaneous and event users, we are currently monitoring negative impacts of existing trail presence where the potential threat to unique, rare, or sensitive ecological components is high, such as these long portions of informal trail paralleling HQ trout streams and acidic seep communities. In areas where current or likely impacts are demonstrably unacceptable, we have conducted mitigation activities. Where we do not find direct evidence of negative trends in ecological conditions we are simply continuing our monitoring efforts for now until a more optimal re-route option can be implemented that satisfies both user expectations and our forest management concerns.

Slide 14: Mt. Creek Brook Trout Habitat Project Impact.

However, when we began forest stream habitat enhancement work in such an area recently, we inadvertently and unexpectedly encountered conflicts between trail user expectations and our habitat management priorities, even though the impact of our project on the trail itself was minimal and indirect.

That experience taught us that finding more efficient ways to advance ecological and trail enhancement priorities as a single body of work is mission critical for us moving into the future with fewer staff resources and increasing public expectations for both habitat recovery,

restoration, and adaptation – and for increased sensitivity and integration of existing trail user concerns.

So I'd like to conclude this part of my talk by summarizing some of the best launching pads we have in place to improve our baseline trail and forest conditions in coming years.

Slide 15: District Goals.

Perhaps the most important change is that we now have articulated district level goals we'd like to advance in our local forest context. We recently had a public meeting on our district management plan and these are the five district goals that will appear in the final draft sometime early next year.

Slide 16: Forest mind map

Based on these goals, we have what I call a new mind map of the Michaux that highlights areas prioritized for management efforts to sustain some of the forests most at risk species and promote its most eco-regionally unique habitats.

Slide 17: Forest Trails Assessment

To complement this new forest mind map, a Trail assessment study incorporating stakeholder input and analysis of existing trail infrastructure was completed in 2016. It prioritized areas north of Route 30 for investment in trail redesign and stewardship engagement that have us primed to better direct both our "in-district" and local stakeholder resources into an improved Michaux trail system.

Slide 18: Trail assessment Tools

The trail assessment also provided our GIS coordinator with new modeling tools to provide evidence-based alternatives for us to chew on in our brainstorming and project planning as forest and trail managers.

Slide 19: Habitat and Trail Project Priorities

Finally, projects that incorporate habitat *and* trail values such as the Bunker Hill habitat restoration project and the proposed Hammonds Rocks Vista trail project have strengthened our partnerships, built in house capacity, and changed operational paradigms within the district.

The "talk, walk, then start the chainsaw" approach has allowed district staff to integrate the interests of diverse organizations such as the Appalachian trail Conservancy, National Wild Turkey Foundation, Trout Unlimited, and other organizational partners in these projects, always through the networked support of the South Mountain Partnership. It's also given them opportunity to leverage a rich array of skills, expertise, and engagement from local universities, county planning and economic development offices, local historians, and recreational user groups.

Of course, the greatest reward for doing good work is that you increase your capacity to do even more fun work in the future.

Slide 20: Dead Woman Hollow burn and trail project

In a few short years, we went from a relatively green prescribed fire crew nervously putting our first fire down on a thirty-acre silvicultural burn, to the 1,400 acre Hairy Springs burn we conducted this spring.

And if you don't think of prescribed fire as a trail management activity, I encourage you to walk the Dead woman hollow section of the AT or ride Three Mile trail through the Hairy Springs burn next May. Instead of a cattle chute of decadent mountain laurel hemming you in, you will find a rejuvenated forest springing to life.

We are also incorporating trail design and construction workshops for our staff into our district budget and workplan to increase our capacity to do in-house trail work as well as provide a bigger pool of district staff with the training necessary to coordinate and oversee weekend trail volunteer projects.

Part 2

Slide 21: Question -- Why are [Michaux] Trails Important?

If trails are ecological givens, they are also indicators of system dynamics. They can tell us where change is happening and help us gain understanding about the agents driving change. Therefore, trail conditions data could help us model likely outcomes if current change trajectories continue.

And if *that* is true, then trails are important because -- *for better or worse* -- they are the paths we are following into our future.

Slide 22: Mathari Valley

The trails I remember as a kid in Nairobi, Kenya reflected the collision of rapid and unplanned human population growth on a landscape. Local streams and sewage ditches were ecological equivalents and trails formed at any available crossing -- whether a discarded tin sheet on a log-jam of plastic bags; or the last large Jacaranda tree around.

What did these trails indicate about landscape and community conditions? Were they stable or improving? Did they help users coalesce around shared values and aspirations to create better conditions for themselves and their descendants?

Were they ***good*** trails? I hope they became good overtime.

Because East Africa also taught me that in our aspirations for the future, we have a lot in common as humans. Even across vast cultural differences.

May I try an experiment on you?

I'm a forester. I love felling trees with a chainsaw. I find aesthetic pleasure in a well-constructed haul road. A trailer of logs leaving the Michaux for a local sawmill fills me with professional satisfaction.

Show of hands, please: How many of you will claim common ground with me on those values? Don't be shy. (Matt, you don't count!)

Slide 23: Desired Future Conditions

Now here's my list of desired future conditions for South Central PA**.**

Would you put any of these on your own top ten list?

How many see four outcomes you like to see too?

Anyone see more than four?

Is there anyone who can't find anything?

Slide 24: Change Agents

In public forest management today, the factors influencing probable future conditions feel overwhelming: Paralysis, cynicism, and confused inefficiency are easy to succumb to.

Slide 25: Transformed Future Slide

Our best antidote is to focus our collective attention on what we want the future to consist of in terms that are as measurable as possible, even if they feel improbable. Then, work diligently, in the face of adverse trends to create movement towards those improbably desirable future conditions we desire.

The fancy term for this is adaptive management. On the Michaux we call it "Trying to fix things."

When we orient our perspective towards the future we want to see and work adaptively till it emerges, we begin to collaborate and function stack instinctively across a vast range of incoming stimuli in service of the future conditions we have committed ourselves to achieving.

Consider, by way of analogy, how a leaf transforms present conditions into signals and energy flows that form the shape and substance of the future for the whole tree. That is the best

metaphor I have found for the ways my colleagues on the Michaux engage in their work and I am as mystified by their transformative efficiencies as I was by cell biology in college.

Slide 26: Cooperative efforts

Obviously, we are not the only leaf on the tree. We need to be part of a much larger canopy of leaves. But, alas, people and organizations aren't leaves; and we aren't genetically and physiologically attached to the same tree. And that's where my leaf metaphor fails me.

So how do we direct our collective actions and experiences in service of what *is* shared in the future we aspire to

I'm not sure. Maybe it can't be done.

But *if* it can. . . ***IF*** it can. . . it will take an intercessory community.

Slide 27: Intercessory Definition Slide

The idea is from theologian Walter Wink who argues that history is shaped by the transforming work of "intercessory" communities. To work their magic on history's arc, these agents require structural opportunities that sustain them within strategic social contexts of their times: The Roman marketplace for first century Christians. Perhaps the City Beautiful movement for our own conservation community.

Slide 28: Trails as intercessory structures.

Could Michaux's trails provide the structural opportunity for an intercessory community in our time?

This forest, it's trail users, and the community of care that surrounds it contain tremendous kinetic energy. I covet that energy's transformative potential not just for our trails, but for the future of this forest and this region. I'm convinced the *better* we make our trails in coming years, the *better* the future will be.

But what are the *best* trails we could create on the Michaux? What are the most *improbably best* future conditions we could follow them into?

That I don't know**.**

Slide 29: Friends Group Invitation

But if you would like to be part of working towards a future we all want; I'd like to conclude by inviting you to a public meeting at Norlo Park on January 30 at 6:30 in the evening.

With our partners from the Pennsylvania Parks and Forest Foundation, we'll be discussing the formation of a Michaux State Forest friends' group. Flyers are available at our display booth, and we'd love to see you there.

Slide 30: Conclusion, Questions

Thanks so much for listening, and for your interest in the Michaux and its trails.