

THIS MEETING WILL BEGIN SHORTLY

National Park Service, U.S. Department of the Interior



Shenandoah National Park

Meadow Run Watershed Restoration Project



Meeting Protocols



- ❖ You have been muted upon entry and will remain on mute throughout the presentation.
- ❖ Check your audio connection.
- ❖ This meeting will be recorded.
- ❖ Please enter questions in the question-and-answer box at any time during this meeting. Please note the slide number if you have questions about a particular discussion point.
- ❖ Questions will be read out loud after the presentation.



Welcome!



- ❖ Introductions
- ❖ Objective of meeting
- ❖ Public Involvement



Agenda



- ❖ Park Information
- ❖ Background on Issue
- ❖ Proposed Action
- ❖ Potential Impacts from the Project
- ❖ Next Steps



Shenandoah National Park

- ❖ Approx. 199,000 acres including 80,000 acres of Congressionally designated Wilderness
- ❖ 2100 species of plants and animals
- ❖ Over 500 miles of trails
- ❖ 231 headwater streams supporting diverse aquatic life and fisheries

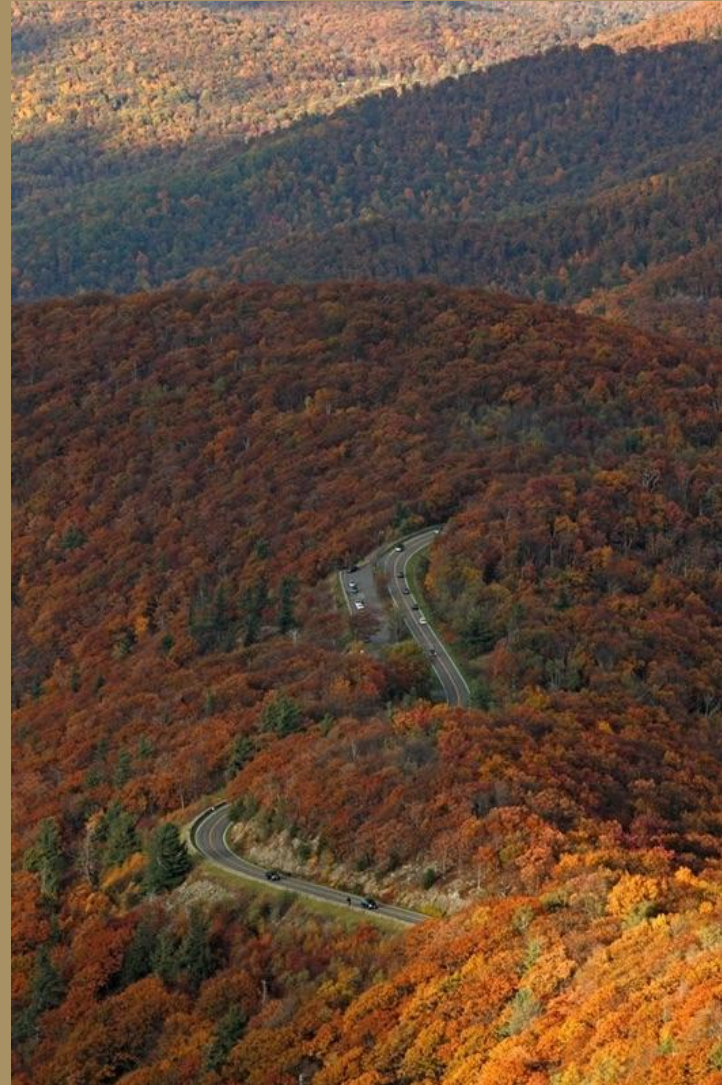


Photo credit: Visitor Shahid Durrani via SHEN Facebook

10/19/15

EXPERIENCE YOUR AMERICA

Park Purpose



NPS Mission: “...natural objects... leave them *unimpaired* for the enjoyment...future generations”

SHENANDOAH NATIONAL PARK preserves and protects nationally significant natural and cultural resources, scenic beauty, and congressionally designated wilderness within Virginia’s northern Blue Ridge Mountains, and provides a broad range of opportunities for public enjoyment, recreation, inspiration, and stewardship.

From Shenandoah National Park Foundation Document (2014)



Background

Impacts of decades of acidic deposition from air pollution:

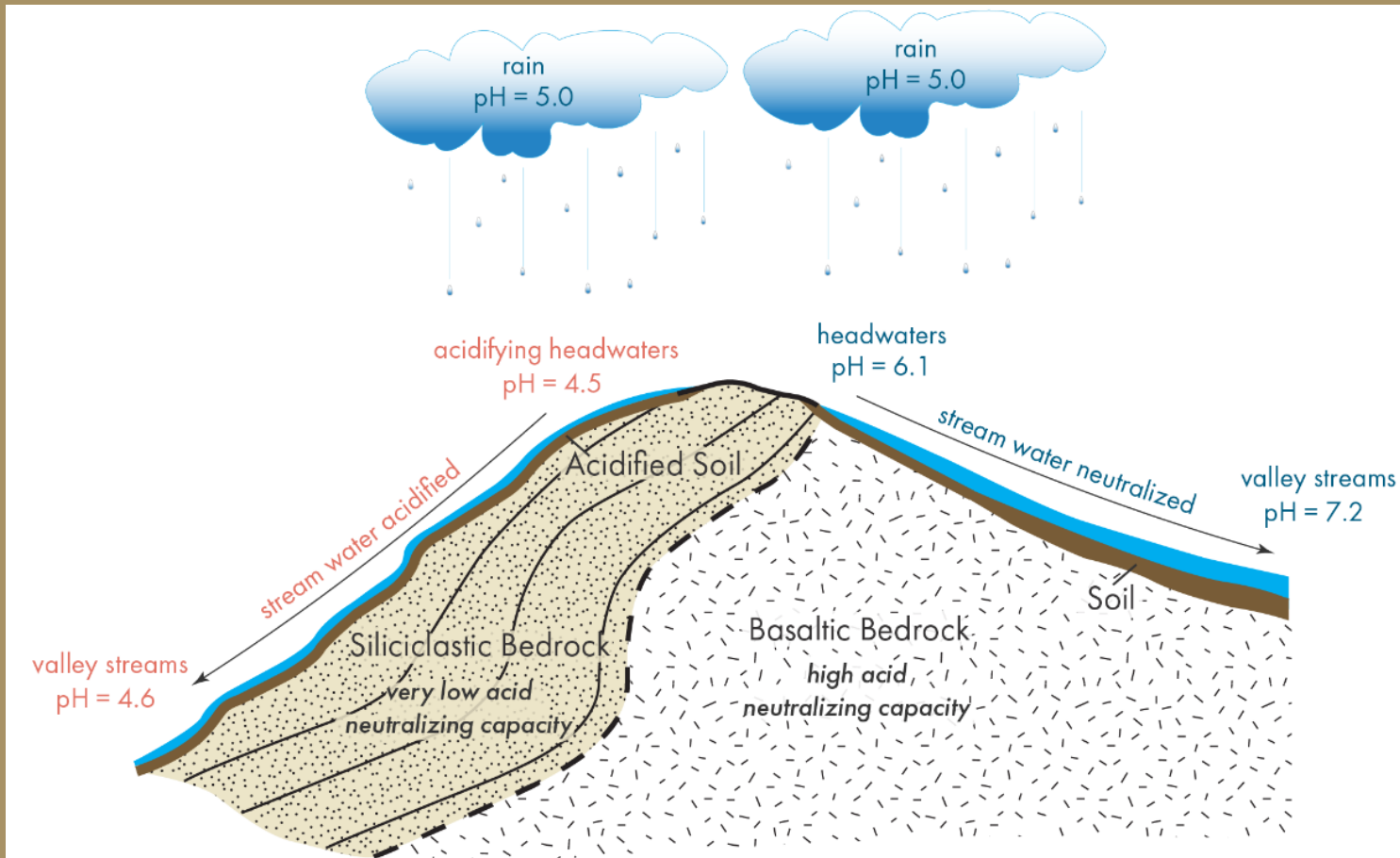
- Acidified streams and soils
- Reduced habitat quality for aquatic and terrestrial wildlife
- Loss of fish and aquatic invertebrates
- Impacted health of plants, trees, and birds
- Degraded visitor experience



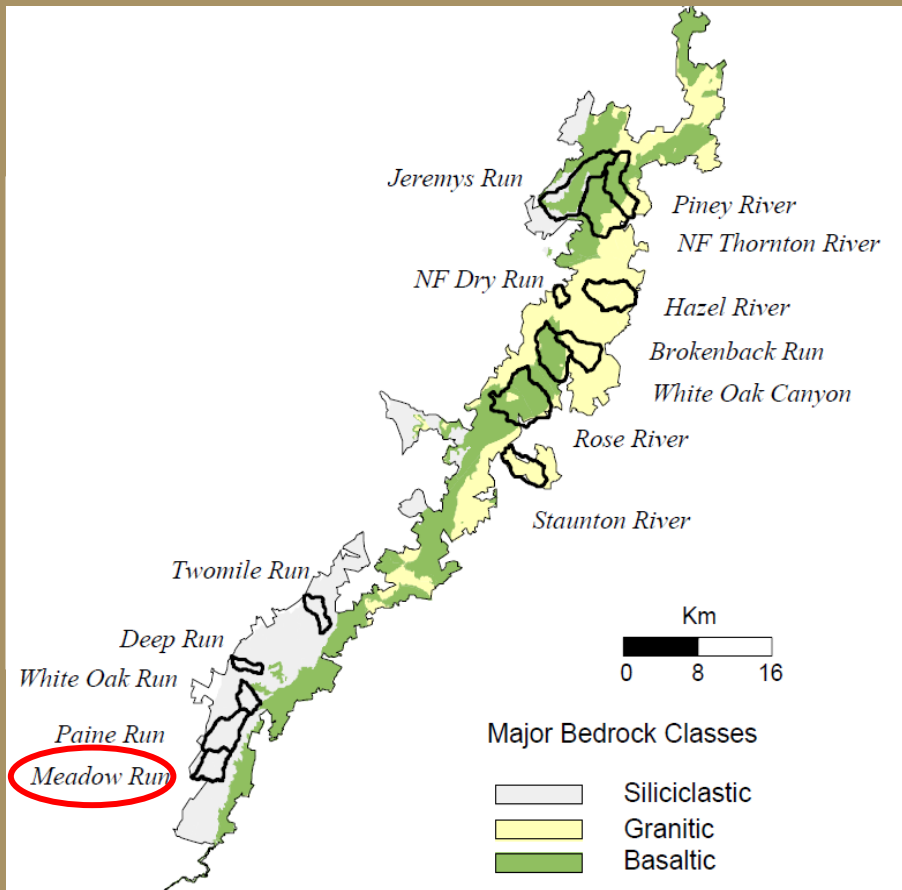
Acidity Impacts Areas Differently



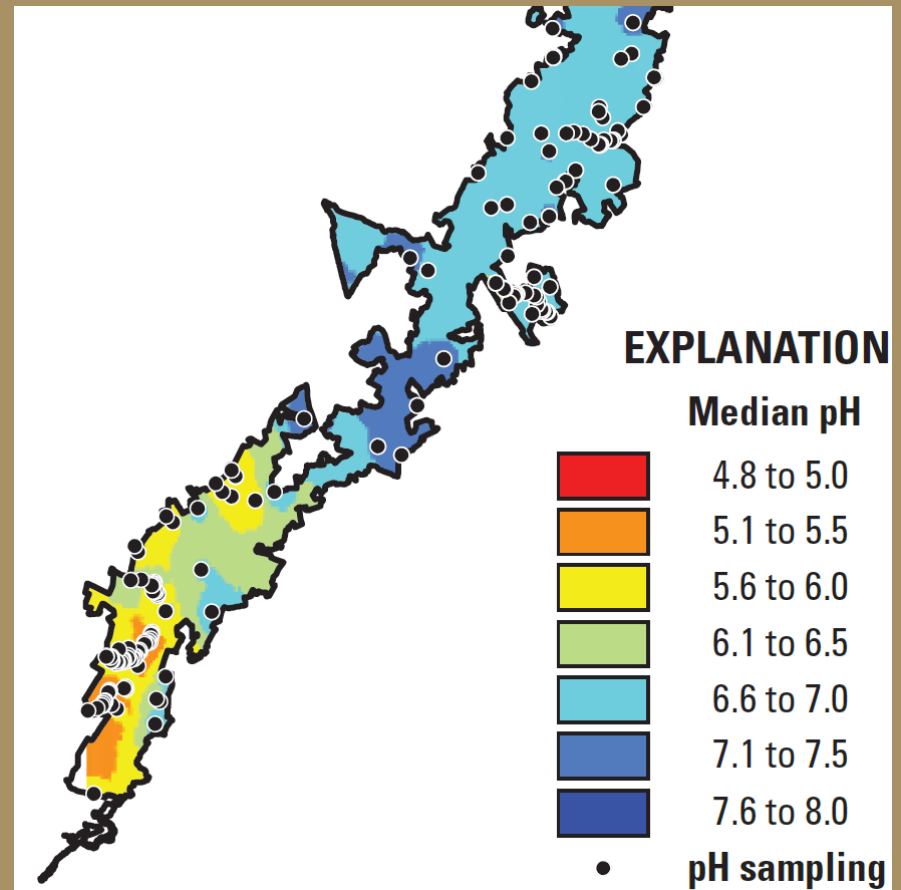
- ❖ Acid Neutralizing Capacity (ANC)– measure of the overall buffering capacity, or ability of solution to neutralize acids.



Acid Impacts in Park based on Geology



Type of Bedrock



Stream Acidity

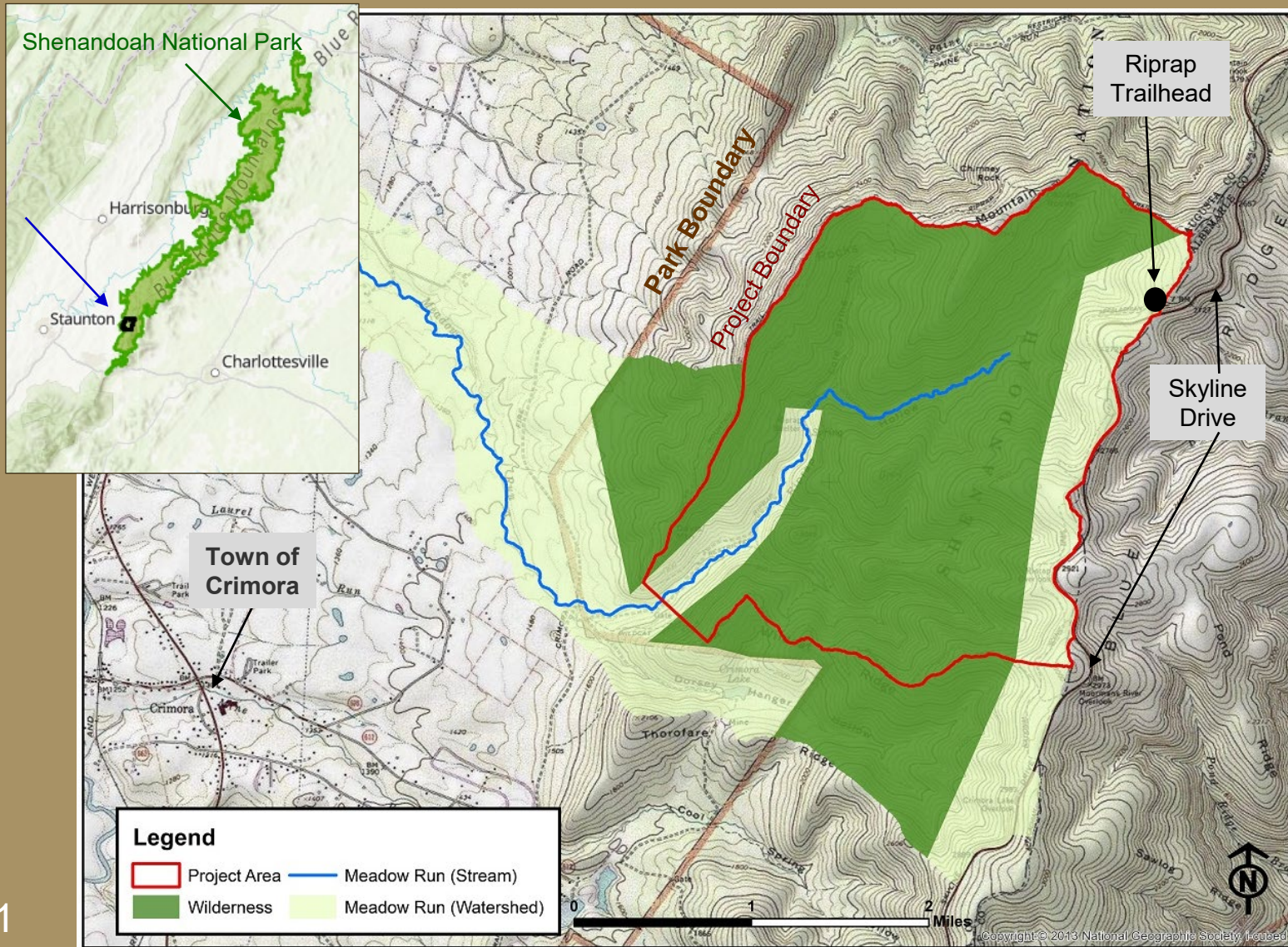
Why Restoration?



- ❖ We understand the problem - 40-years stream research (in cooperation with UVA)
- ❖ Streams listed as impaired by Virginia DEQ
- ❖ Research shows watershed will not recover naturally for 100+ years
- ❖ Funding from court settlement



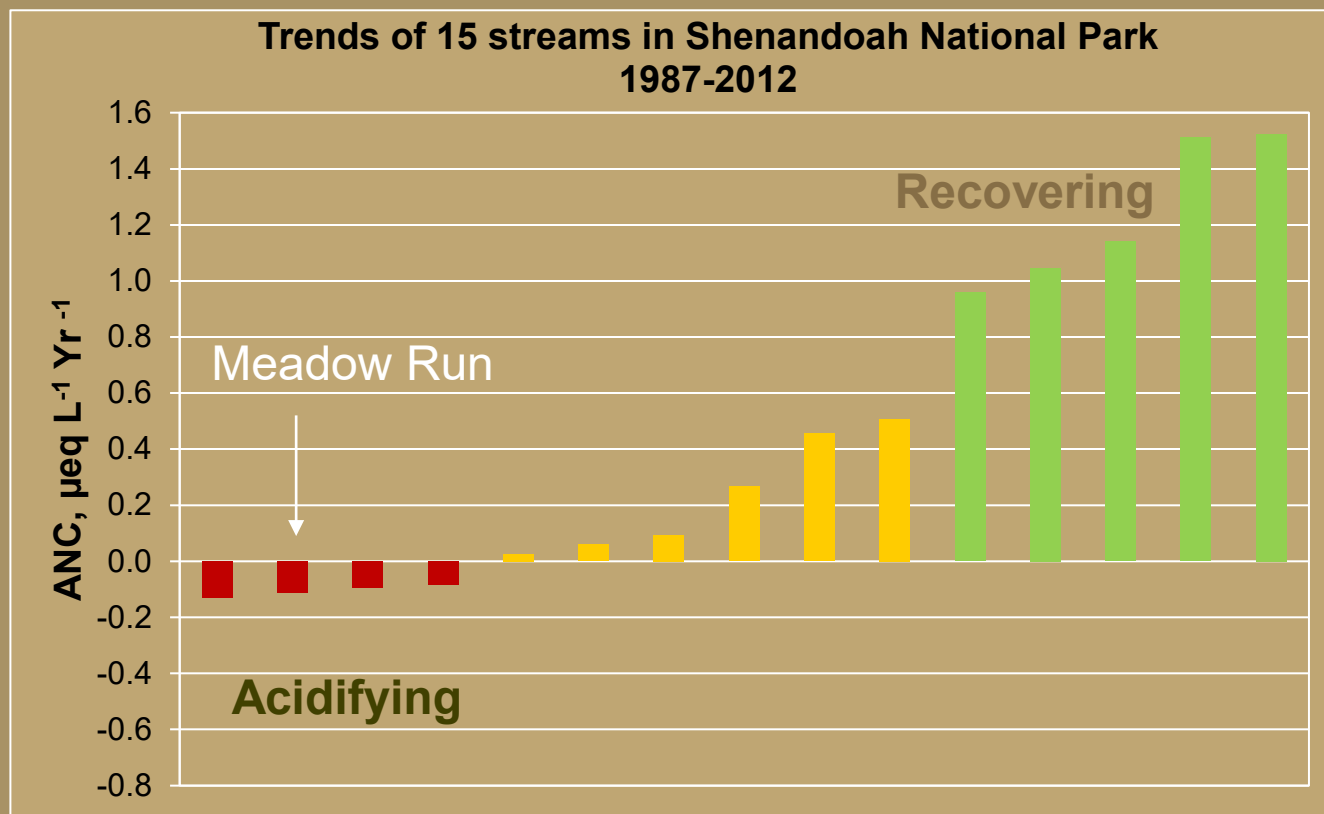
Why Meadow Run?



Meadow Run—not improving



- ❖ Healthy Conditions in early 1900's
- ❖ Health declined with decades of acid rain
- ❖ Not recovering – getting worse – despite cleaner air



Proposed Action: Application of Limestone Sand

- ❖ Apply sand to rugged lands by helicopter
 - Ca and Mg in limestone adds buffering capacity to soils
- ❖ Two alternatives:
 - Split dose (preferred)
 - Uniform dose
- ❖ Prepare Implementation Plan
 - to include a Safety Plan and Public Communication Plan
- ❖ Monitor watershed improvement

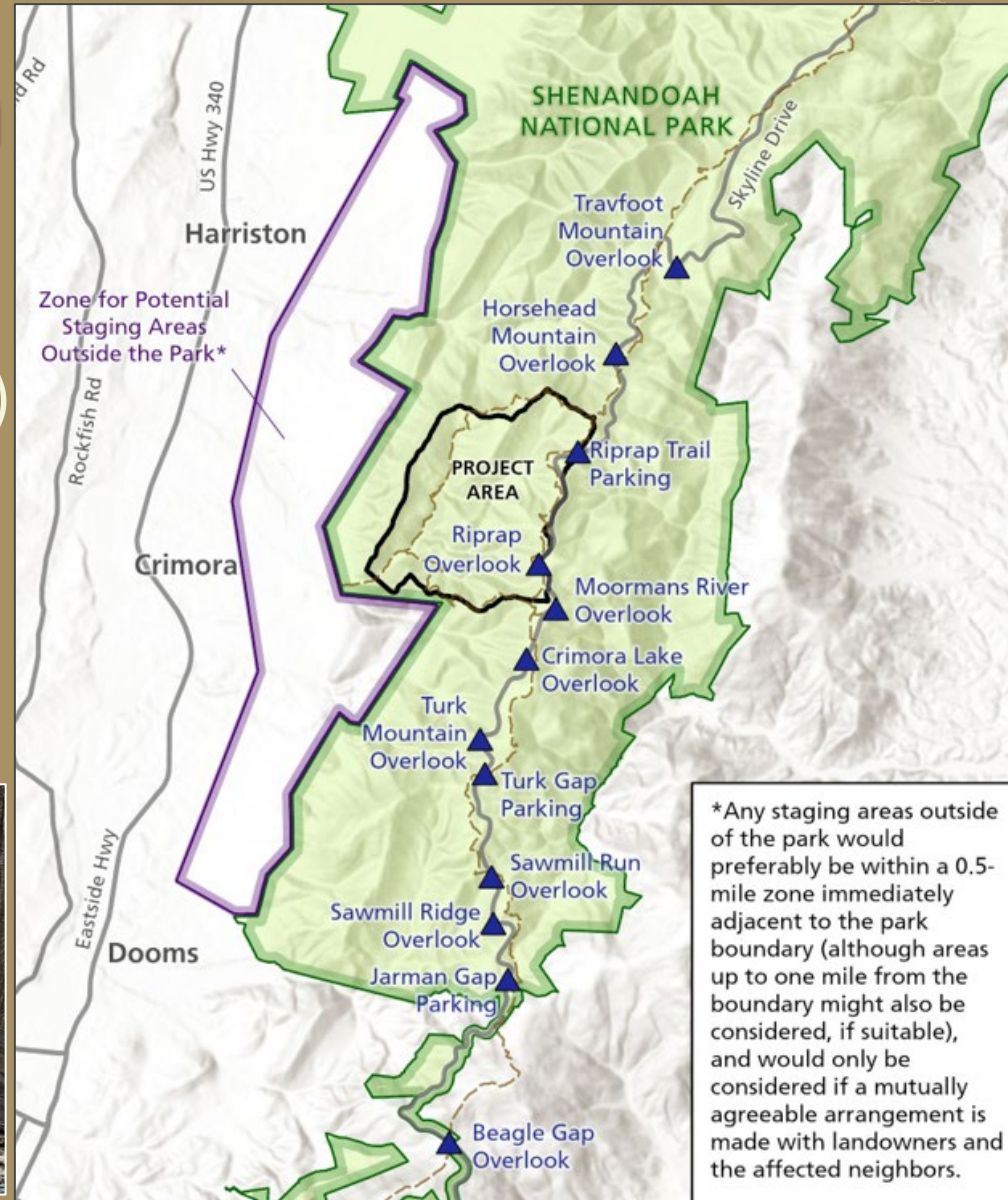


**Spreading by
Helicopter**

*U.S. Forest
Service liming
to restore lands
in Monongahela
National Forest
in 2018)*

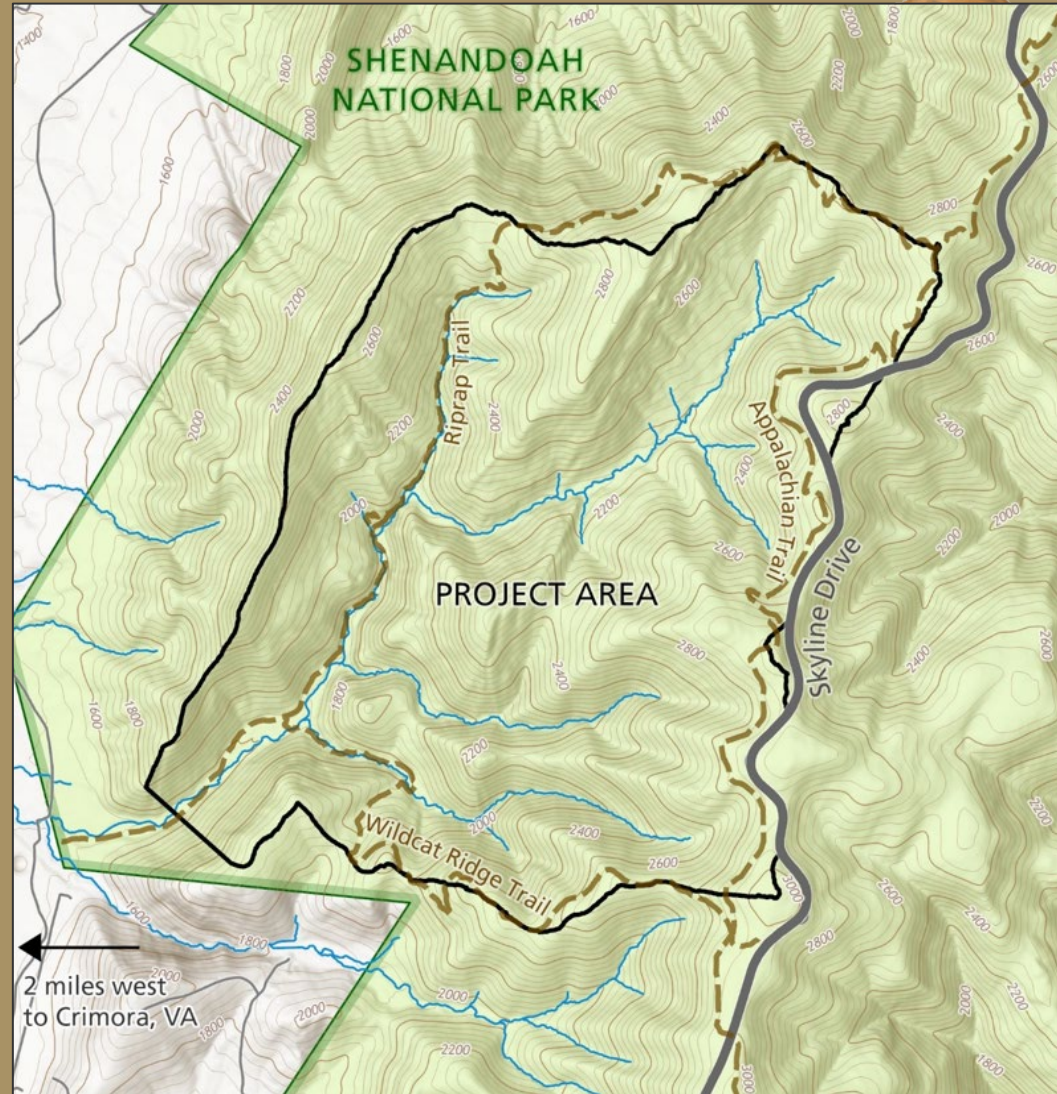
Implementation

- ❖ Multiple staging areas
 - along Skyline Drive
 - off park (with permissions)
- ❖ Stockpiling
- ❖ Flight paths
- ❖ Service landing area(s)



Schedule and Closures

- ❖ Stockpiling: Could be Nov.
- ❖ Flights: 2 to 3 mo. (Dec–Feb)
- ❖ Weekdays vs Weekends
- ❖ Limit helicopter with load restrictions
- ❖ Area and Trail closures - duration
- ❖ Appalachian Trail (shorter, as needed)
- ❖ Skyline Drive (intermittent)





Impacts: Soils

Liming adds buffering capacity to the soils, increasing its pH, and improving ecosystem health for well over 100 years



Impacts: Stream



- ❖ Increase in pH >6.0 in water
- ❖ Removal from Virginia's list of impaired waters
- ❖ Increase in abundance of fish species and macroinvertebrates (important food source for fish)



Brook trout

Impacts: Plants



- ❖ Long-term improvement in plant growth and overall health of forest
- ❖ Soil pH doesn't change much - acid-sensitive plants may do slightly better
- ❖ Risk of spread of non-native invasive species-controlled by mitigation measures





Impacts: Land Animals

- ❖ No/minimal impact from falling sand during liming
- ❖ Birds – increase in calcium-rich food for eggshells and raising young
- ❖ Salamanders – more growth and reproduction
- ❖ Snails – calcium for shell growth



Hermit thrush

Impacts: Wilderness Character



- ❖ Use of helicopter (visual, noise) and closures – temporary adverse effect
- ❖ Long-term,
 - Reduces existing impacts on wilderness resources (soil, stream, vegetation, wildlife)
 - beneficial impact on natural quality of wilderness character



Impacts: Noise

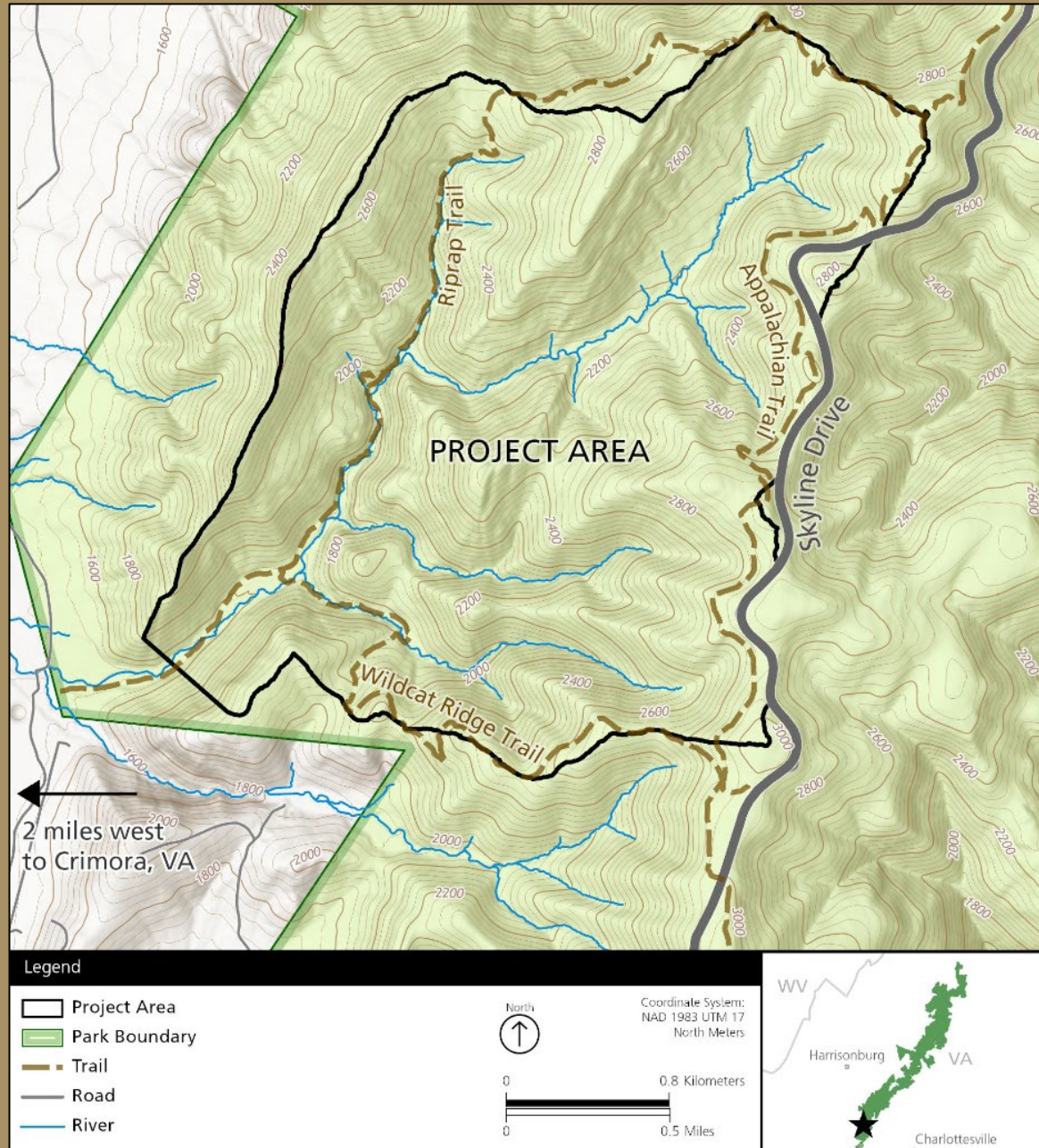


Sound Levels with Distance from Helicopter and Everyday Sounds and Noises

Distance from Helicopter		Noise Levels	Everyday Sounds and Noises (CDC 2020)	
feet	mile	dBA	dBA	Sound Source
225		92	95	Motorcycle
500		85.5	80-85	Gas-powered lawn mowers or leaf blowers, City traffic (inside the car)
1000		79.0		
1,584	0.3	75.0		
2,640	0.5	70.6	70	Washing machine, dishwasher
	1.0	64.6		
	1.6	60.5	60	Normal conversation, air conditioner
	3.0	55.0		

- ❖ Effects of noise on park visitors, neighbors and wildlife

Impacts: Noise



Impacts: Visitor Use and Experience



- ❖ Winter closures of varying durations
- ❖ Long-term, visitor experience improves - better opportunities for recreational fishing, wildlife observation, forest health



Where you can Participate (*) in the Process



JUNE 2019 *	Civic Engagement Meetings (for project concept)
OCTOBER 2020 *	Public scoping period
NOVEMBER - DECEMBER 2020	Review/analyze public scoping comments
DECEMBER - JANUARY 2020	Prepare and release draft EA
JANUARY 29 - FEBRUARY 28, 2021 *	Public review/comment period for the EA
FEBRUARY 9 and 11, 2021 *	Public meetings (virtually)
APRIL 2021	NPS decision/signed FONSI

We are here

How to Comment

— due February 28, 2021



1. Submit comments electronically at the project website link below (preferred method).



2. Submit written comments to the park's headquarters in Luray, VA, by mail to:
Meadow Run Watershed Restoration Project
Superintendent Patrick M. Kenney | Shenandoah National Park
3655 U.S. Highway 211 East | Luray, VA 22835



Project Website

For more information on this project or to submit public comments, please visit the project website at:

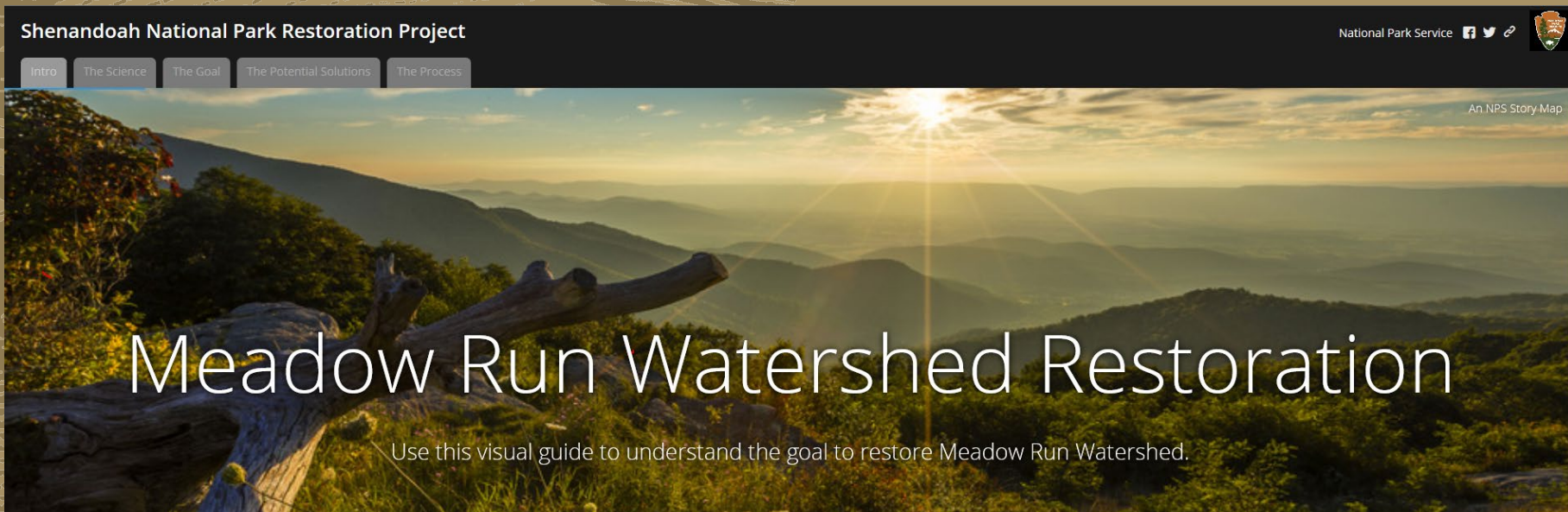
<https://parkplanning.nps.gov/MeadowRunRestoration>

Project Website for more Information:



<https://parkplanning.nps.gov/MeadowRunRestoration>

Includes link to interactive “Story Map” →



Question-and-Answer Session



- Reminder: Please enter questions in the Q&A box.
- I will read the questions out loud
- If you do not hear your question right away, it may be because we are grouping similar questions by topic
- Post-meeting questions can be directed to Jim Schaberl at (540) 999-3500 ext 3491



Thank you for your interest!



Questions and Discussion

