

Terrestrial Habitat and Forest Health



WHAT DO WE HAVE CURRENTLY & WHERE SHOULD
WE TRY TO CONCENTRATE PROJECT WORK?

Quantifying desired conditions

NRV example—COVE forest



EARLY successional: 0-20 yrs

MID successional: 21-80 yrs

LATE successional: 81+ yrs

OPEN: large gaps between trees, patches of grass, herbs and forbs on forest floor. (max BA~60ft²/acre)

CLOSED: forest canopy intact, shady understory with little grass, herbs and forbs



If we have all the AGES and STRUCTURES, then we'll have a fully-diverse Appalachian forest ecosystem.

Cove Forest acreage

4%	0%	39%	9%	48%
Early	Mid-OPEN	Mid-CLOSED	Late-OPEN	Late-CLOSED

There is a different NRV for each major forest community.

Three main questions...



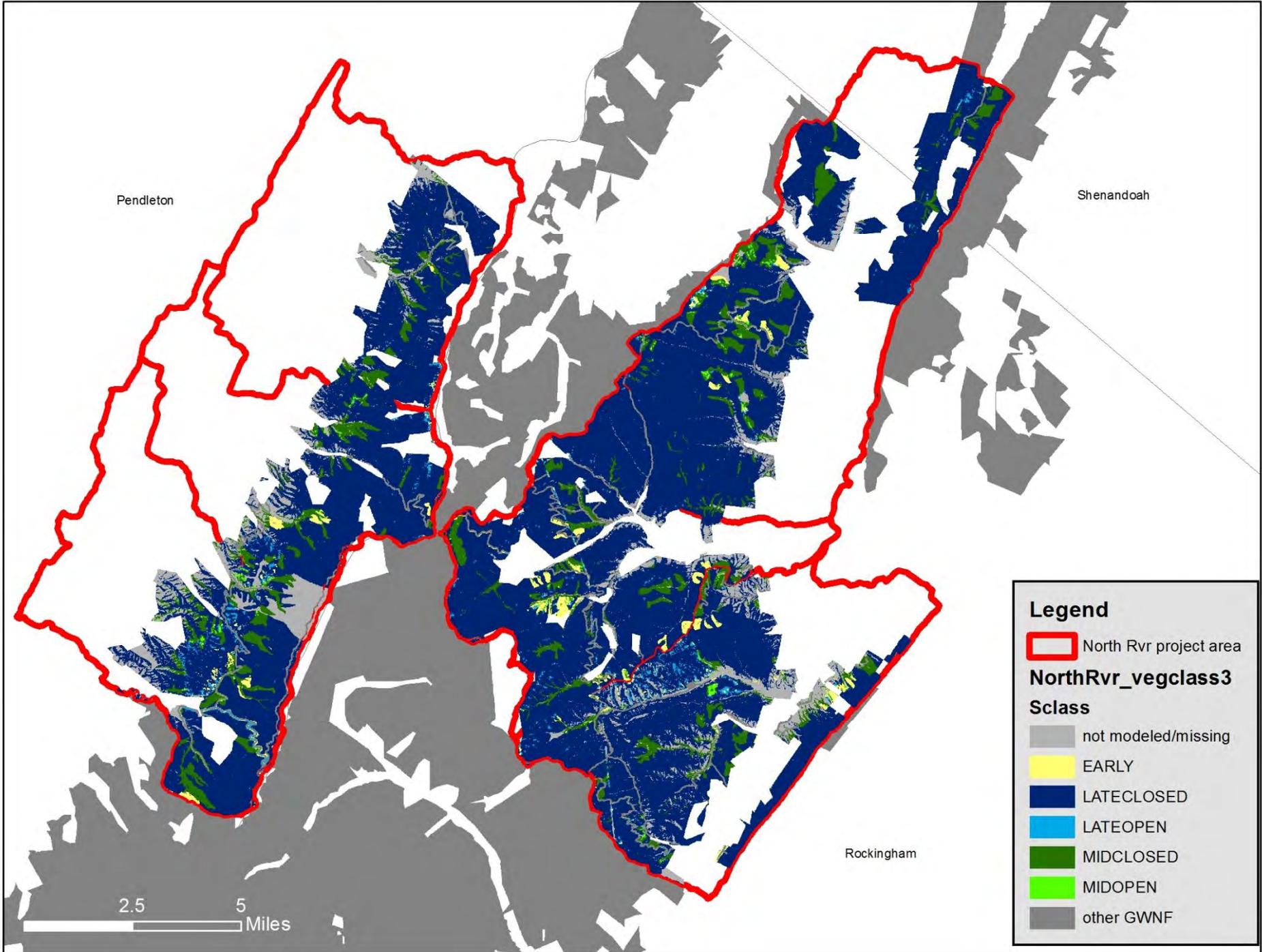
What types of habitat do we have in project area now?

What are the Desired Conditions from the Forest Plan?

What tools can we use to achieve Desired Conditions within the project area?

Data needs for Ecological Departure Analysis

Data type	source
Map of vegetation that may have been dominant on the landscape prior to Euro-American settlement	Ecological Systems derived from Ecological Zones (Simon 2011)
Current vegetation type	Forest types from GWNF Continuous Inventory & Stand Condition (CISC) or FS Veg data
Current forest stand age	Forest stand age from GWNF CISC data
Current forest stand canopy cover percent	<ul style="list-style-type: none"> • from satellite imagery (LANDFIRE forest cover data) • Re-measured canopy cover within burn units



Ecological Departure results

North River areas

PINE FOREST	Early	Mid-closed	Mid-open	Late-open	Late-closed	Total
Desired (NRV)	13%	3%	25%	54%	5%	100%
CURRENT	2%	3%	0%	1%	94%	100%
Ecological Departure						89%
OAK FOREST	Early	Mid-closed	Mid-open	Late-open	Late-closed	Total
Desired (NRV)	12%	7%	10%	57%	14%	100%
CURRENT	3%	5%	0%	1%	90%	100%
Ecological Departure						76%
COVE FOREST	Early	Mid-closed	Mid-open	Late-open	Late-closed	Total
Desired (NRV)	4%	39%	0%	9%	48%	100%
CURRENT	0%	25%	1%	1%	73%	100%
Ecological Departure						26%



- Desired ecological conditions set by the GWNF, using an ecological model
- Current ecological conditions determined using available GWNF data and satellite data
- Compare *desired* condition to *current* condition

Results of comparison:

- Both major ECOZONES are significantly departed from their desired conditions
- Biggest single need is to turn CLOSED forest into OPEN forest (for both mid and late ages)
- A moderate amount of EARLY-successional forest is needed

Habitat creation tools

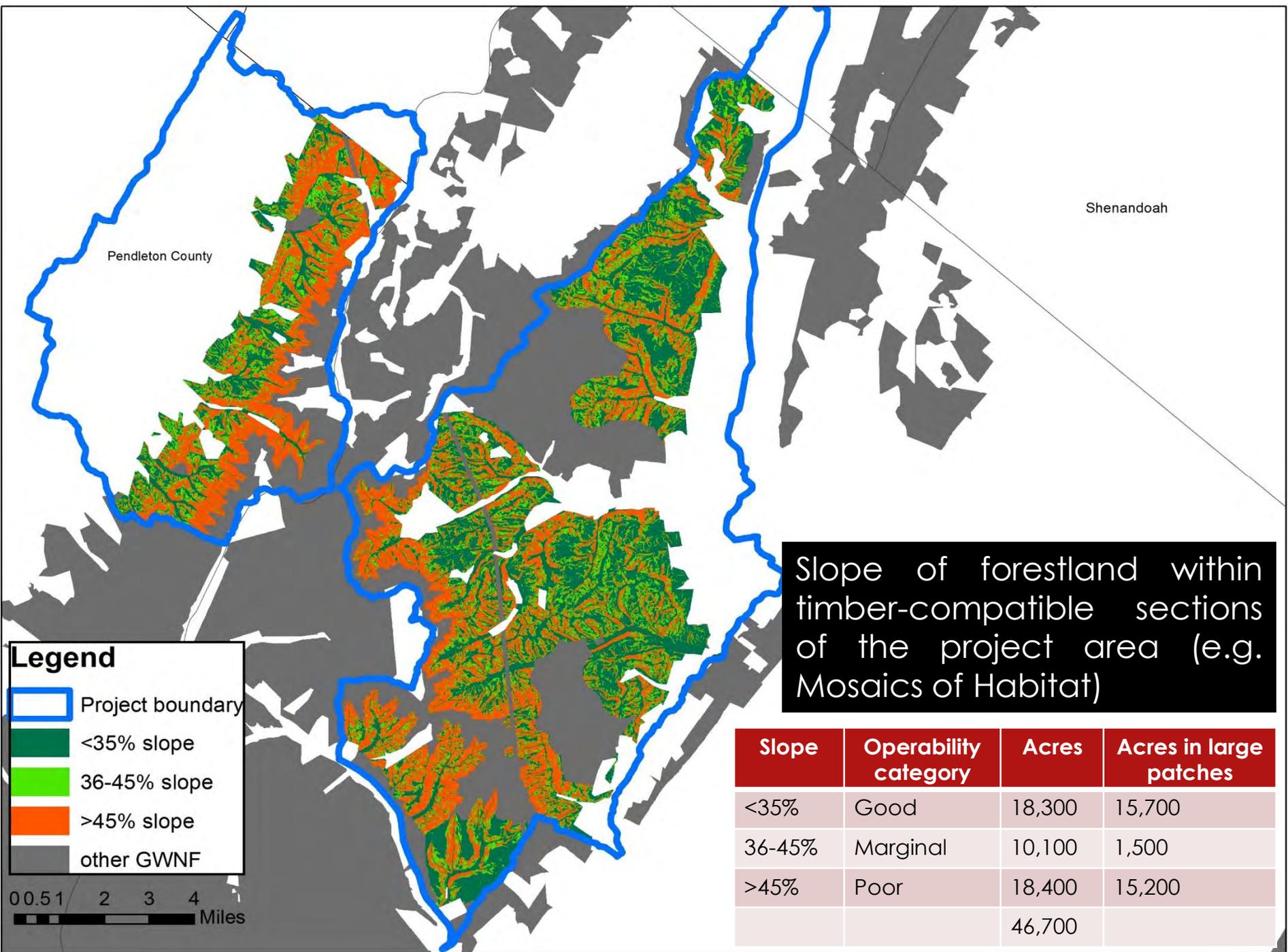
- ▶ **Timber Harvest** – create open canopy forest, young forest, early successional habitat, or permanently open habitats through removing trees off the landscape.
- ▶ **Prescribed Fire** – restore forest to historic fire regimes and species composition, maintain early successional and open canopy habitat types, create canopy “gaps” to increase sunlight to forest floor, and reduce fuel loadings and wildfire severity.
- ▶ **Chemical** – Treat and suppress highly invasive plant species that are currently replacing the native flora of the GWJ Forest ecosystems.
- ▶ **Mechanical** – Mulching/mastication, hand tools, dozer operations to remove unwanted vegetation or alter species composition.



Where can we put those tools to use to restore ecosystems, increase species diversity, and enhance wildlife habitat?

- ▶ Management Prescriptions
- ▶ Timber Harvest Operability and Access
- ▶ Rx Fire History in the Project Area and Potential Limitations for New Burn Units
- ▶ Treating Non-Native Invasive Species – which species, how many treatments are needed to suppress, and how many acres can we treat feasibly via chemical, thermal, and mechanical means?





Shenandoah

Pendleton County

Legend

- Project boundary
- <35% slope
- 36-45% slope
- >45% slope
- other GWNF

0 0.5 1 2 3 4
Miles

Slope of forestland within timber-compatible sections of the project area (e.g. Mosaics of Habitat)

Slope	Operability category	Acres	Acres in large patches
<35%	Good	18,300	15,700
36-45%	Marginal	10,100	1,500
>45%	Poor	18,400	15,200
		46,700	

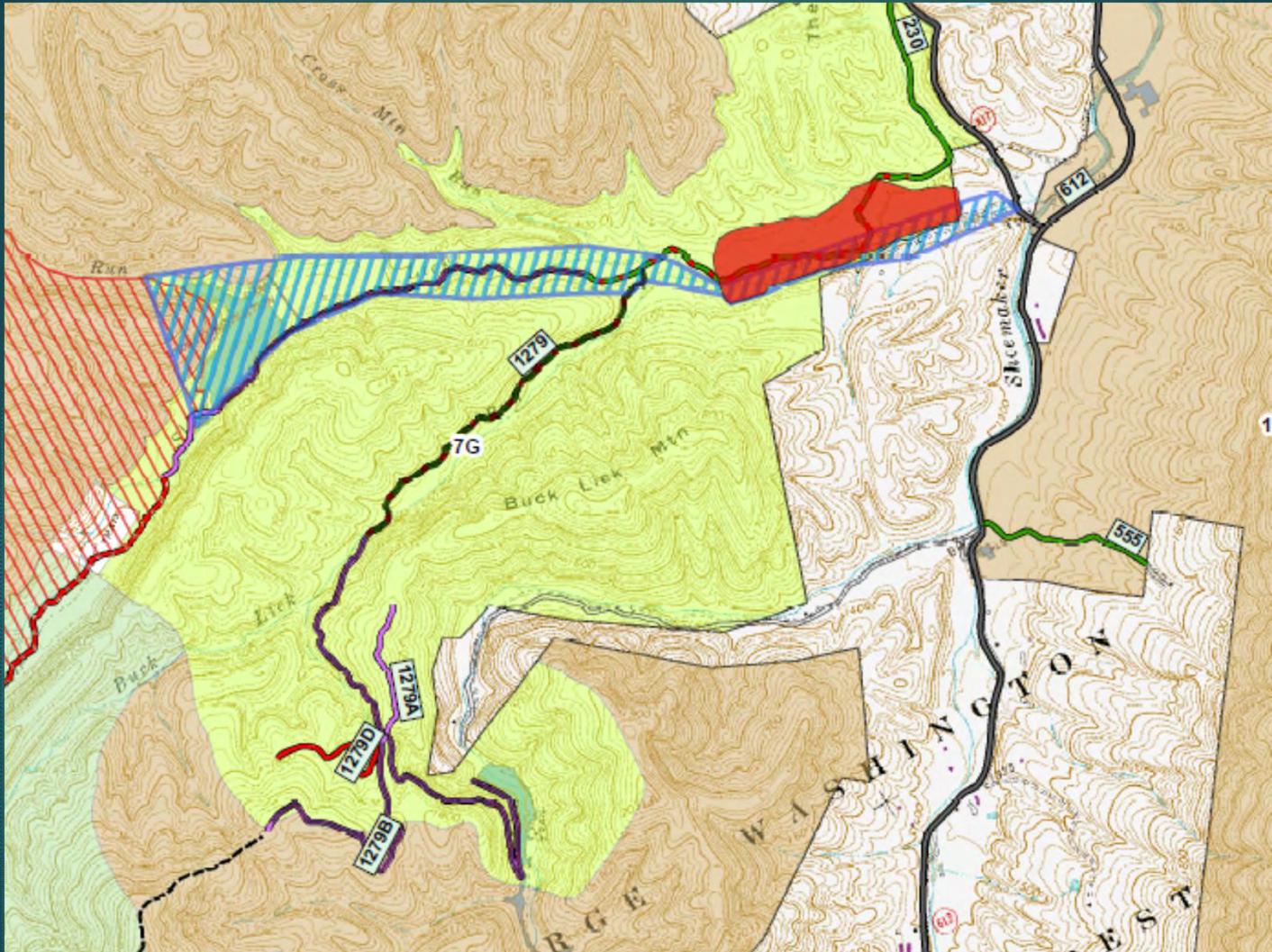
Wildlife Habitat Improvement Project Ideas

The following areas have been proposed for more wildlife habitat work as part of NSM Project. Some of these areas have been managed for wildlife for a long time and have had significant rehabilitation recently that needs to continue

1. Slate Lick Fields Area (Handicap Hunter access)
2. Gauley Ridge Area
3. Grove Hollow Area (Handicap Hunter access)
4. Camp Run Area
5. Other Ideas??



Slate Lick Fields Habitat Project



- ▶ 60 acres old fields managed as open habitat, handicap hunter access, Slate Lick/Hog Pen Reservoirs

Slate Lick Fields Habitat Project

Suppression of Non-Native Invasive Species –
Restoration of Native Vegetation.

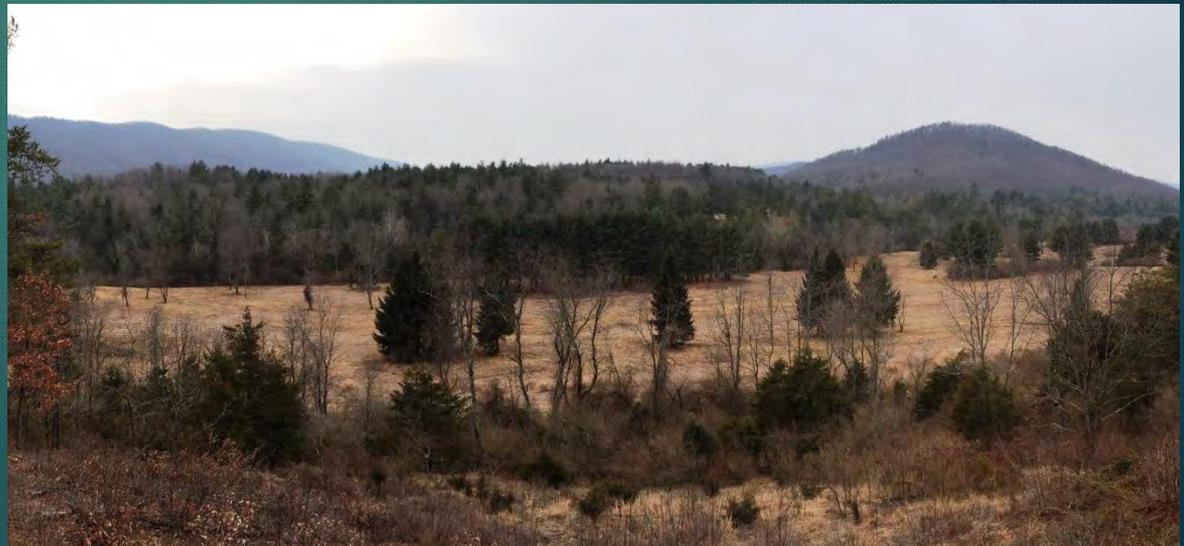


Three years of work to date...

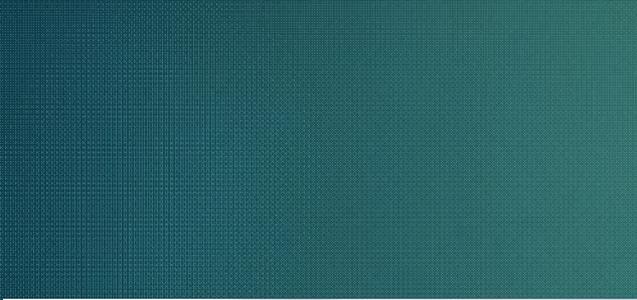
- Mechanical removal of a portion of the autumn olive hedgerows
- Chemical treatments of highly invasive mile-a-minute vine
- Nutrient management and planting of phase I and II.
- Chemical & mechanical treatment of fescue, thistle, autumn olive, honeysuckle and other NNIS.
- Seeding, tilling, spraying, re-filling, reseeding...



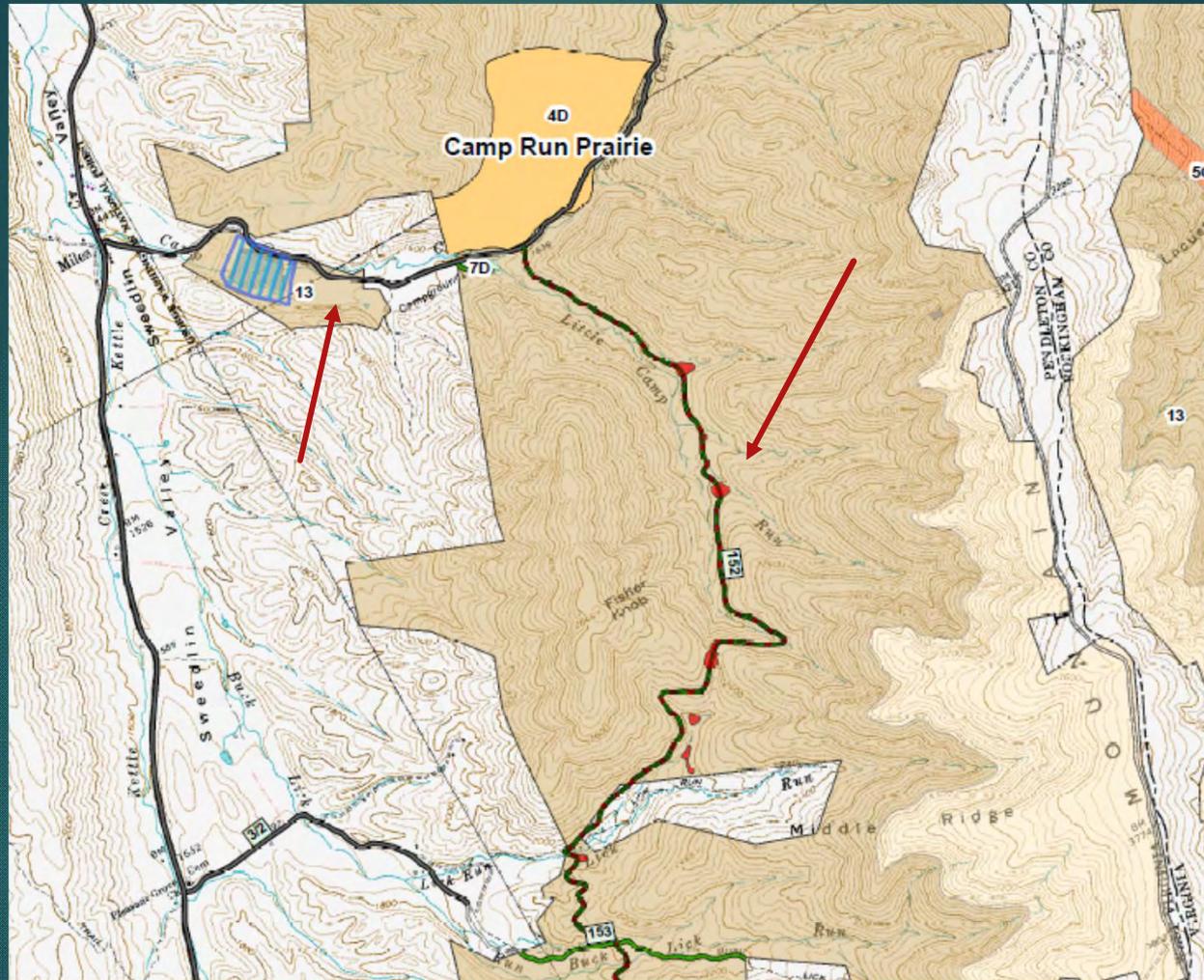
Phase I area – 17 acres



The Progress- via VA Stamp Funds

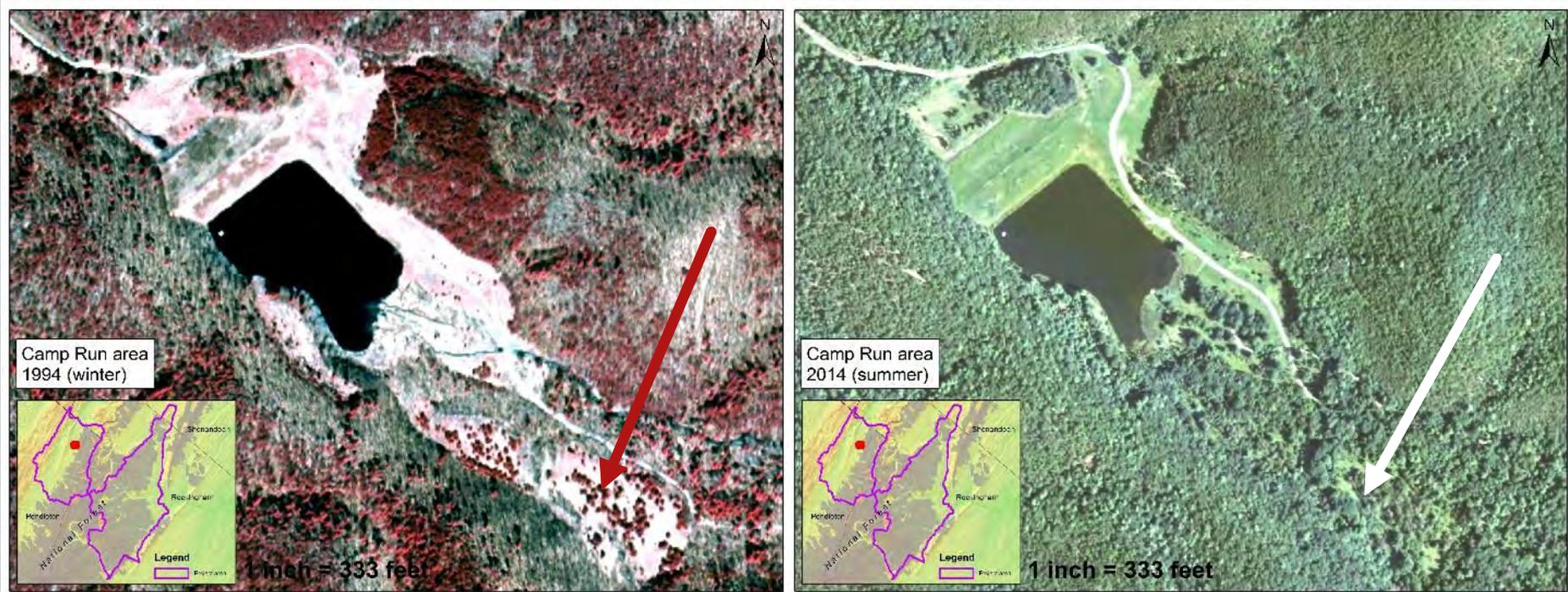


Camp Run Area



Camp Run Reservoir, Old Field Wildlife Project, Currently Maintained Openings

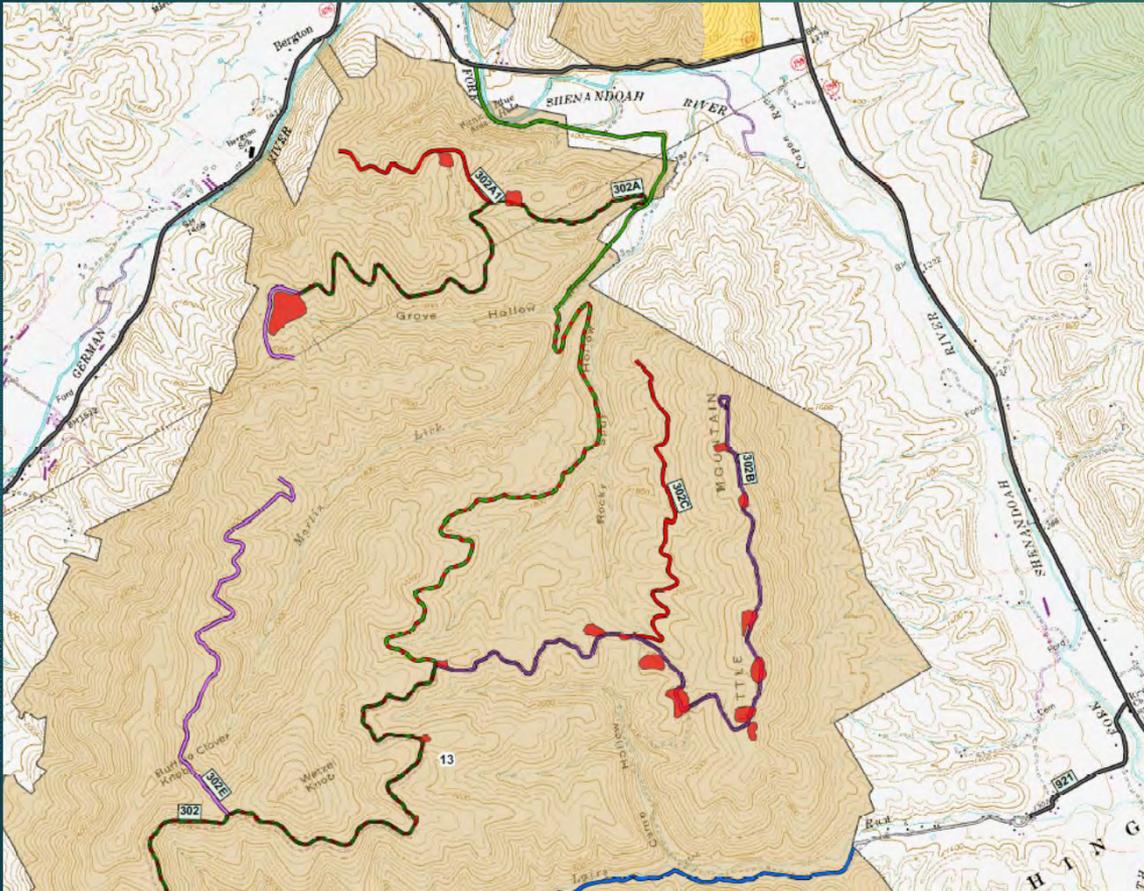
Camp Run Area



- Difference over 20 years in vegetation succession
- Potential Pine Savannah and “Old Field” Habitat
- Proximity to Stocked Reservoir and Camp Run CG

Grove Hollow Area

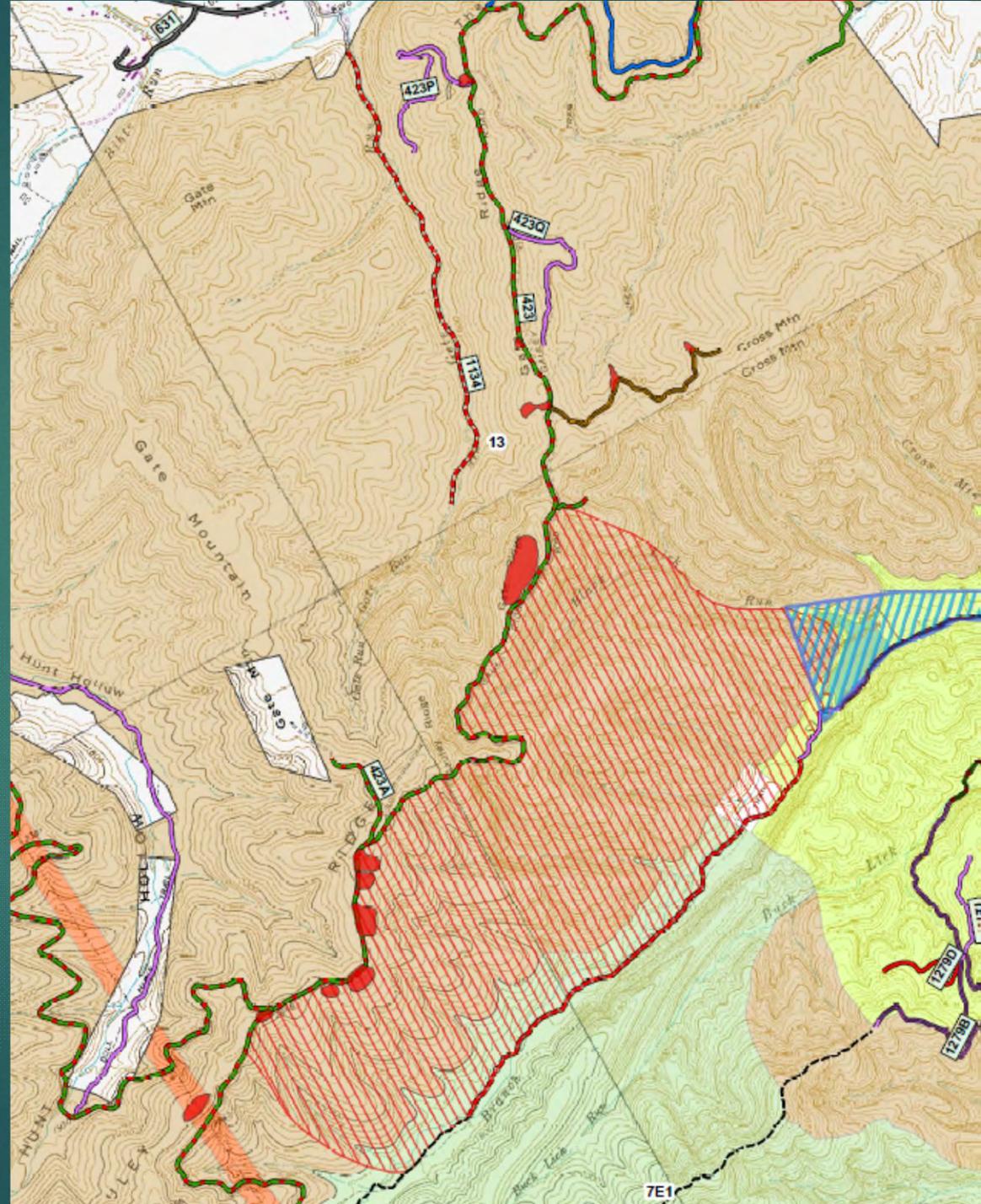
Wildlife clearing complex, maintained via mowing every 2-3 years to remove woody encroachment



- NNIS issues and low quality openings for wildlife forage and cover
- Stamp rehab project in 2013
- Rocky Spur timber sale KV
- Blue Hole Handicap Hunter Access

Gauley Ridge Area

- Wildlife opening complex maintained via mowing/spraying on a 2-3 year rotation
- NNIS issues and low quality openings for wildlife forage and cover
- Stamp rehab project in 2016 to treat spotted knapweed
- Part of greater Rx burn habitat



Gauley Ridge Area





Other Project Ideas or
Areas to Focus??