Mount Rogers Naturalist Rally 2016

Biological Survey Program at Grindstone Campground

Ecoregion: Southern Crystaline Ridges and Mountains

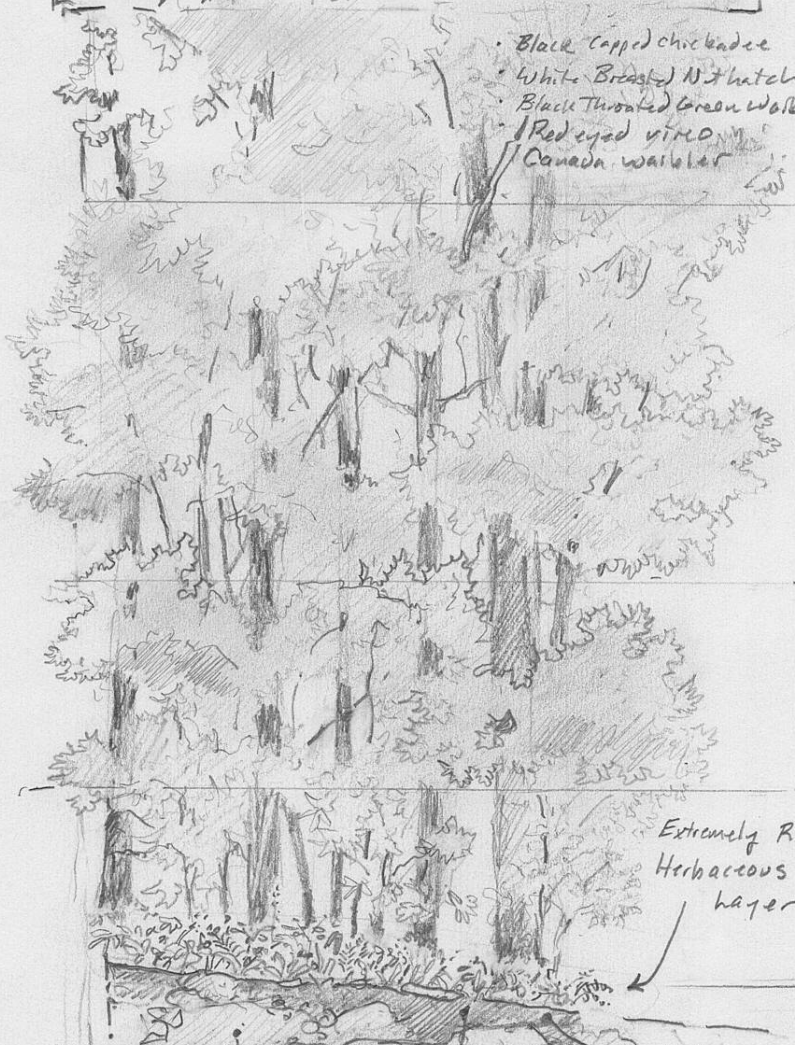
Plot # MRNR-01 Elevation: 3850-3900'

Aspect: North-facing Slope: Moderate (~21%)

Plot Size: 8,611 sq. ft.

Southern Appalachian High-Elevation Rich Cove Forest. G3/S2

Tilia americana - Fagus grandifolia - Betula alleghaniensis - Fraxinus americana - Aesculus flava / Allium tricoccum - Caulophyllum thalictroides - Viola canadensis



115'

Upper Canopy (66'-115') — Upper canopy dominated by Basswood, Beech, Ash, Birch. Occassional Buckeye, and Magnolia. 6 species observed, 22 individual trees. Largest trees had a d.b.h. of 24 inches.

66'

Middle Canopy (33'-66') — Middle canopy made of 75% sugar maple. 5 species and total of 16 trees. Largest trees had a d.b.h. of 11 inches.

33'

Lower Canopy (20'-33') — Sparse Lower canopy with American beech, sugar maple + yellow buckeye saplings. (uncounted)

20'

Shrub layer (2'-20') — Sparse shrub layer dominated by American beech (uncounted)

2'

Herbaceous Layer (0-2') 60+ species

0

D. Floyd. BRDC.

CENTER FOR URBAN HABITATS

ECOSYSTEM CLASSIFICATION DATA COLLECTION FIELD FORM

PLOT# MRNR-1 PLOT NAME Brindstone Campground - Whispering Waters

PROJECT MR Naturalist Rally, Saturday Program DATE 5-7-2016

COUNTY/CITY Smyth STATE VA

RECORDER (initials) DST SURVEYORS (initials) 17 people (+/- 5)

ECOREGION (Omernik Level IV) Southern Crystaline Ridges and Mountains ELEVATION RANGE (ft.) 3800 - 3900'

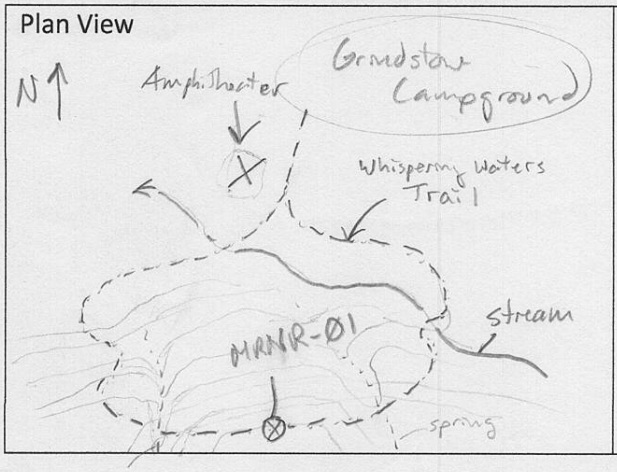
LATITUDE (centroid) 36.6840 - - LONGITUDE (centroid) -81.5430 - -

PLOT SIZE (sq. ft.) 8,611 PLOT DIMENSIONS (sq. ft.) — x — or 52.4' radius

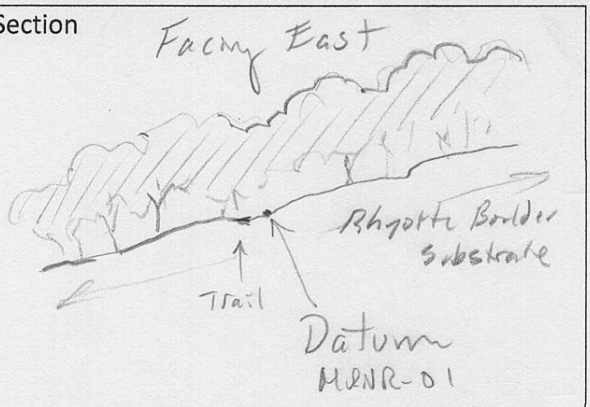
ESTIMATED ECOSYSTEM SIZE (circle one) **< 1 acre** **1-10 acres** **10-50 acres** **50-100 acres** **Unknown**

PLOT LOCATION DESCRIPTION Brindstone Campground - about halfway around Whispering Waters Trail - highest point Plot datum located immediately upslope of Trail

Plan View



Section



GEOLOGIC FORMATION Mount Rogers Formation (spring)

ROCK TYPES PRESENT Phenocryst-poor Rhyolite

SURFACE COVER *(Excluding flora, total = 100%)*

Bedrock — % Organic matter 40 % Boulders 15 % Cobbles/Gravel 10 %

Decaying Wood 30 % Mineral Soil/Sand — % Water — % Other 5 %

SLOPE rise (x)=21 run(y)=100 *100x/y=* □ 0-3% (level or nearly so) □ 3-8% (gentle/undulating) □ 8-16% (sloping/rolling) ☒ 16-30% (moderate/hilly) □ 30-65% (steep) □ 65-75% (very steep) □ 75+% (extremely steep)	**ANGLE OF INCLINE** tan^{-1} x/y = **θ** *(degrees)* Single measure____ or Average of 11.8° (Range: 10 to 13.6) **ASPECT** (10° east of north) ☒ north □ south □ northeast □ southwest □ east □ west □ southeast □ northwest

LANDFORM	
□ ridge / interfluve	□ seep / swale / non-alluvial bottom
□ saddle / gap	□ bedrock outcrop
□ dune	□ alluvial flat / alluvial terrace / floodplain
□ beach / overwash flat	☒ boulderfield / talus / debris slide
□ slope bench / ledge / step	□ floodplain levee
☒ side slope	□ hill / knob / monadnock
□ interdune flat / interdune swale	□ channel shelf / stream margin / bar
□ fan piedmont	□ rolling / dissected upland
□ tidal flat	□ backswamp / slough / oxbow
☒ cove	□ sag pond / basin
□ ravine	□ sag pond / basin
□ cliff / escarpment / face	☒ OTHER: possible colluvial debris or bench

Topographic Position	
□ undulating / flat plain	□ lower slope
□ crest / interfluve	□ toe slope
□ upper slope	□ plain/level/bottom
☒ middle slope	□ basin/depression

Evidence of Disturbance	
□ ditching/hydrologic alternation	□ clearing
□ dogwood anthracnose	□ spruce decline
□ oak decline	☒ grazing/browsing
□ exotic plants	□ fire
☒ hemlock adelgid	□ wind/ice damage
☒ trails/roads	□ erosion
□ gypsy moth	☒ logging
	□ Other

Disturbance Comments: Given the unusually low number of woody species we suspect unusual soil drainage is taking place, perhaps the result of several meters of colluvial substrate.

SOIL DRAINAGE CLASS	SOIL MOISTURE REGIME
□ rapidly drained	□ Xeric
□ well drained	□ Dry-mesic
☒ moderately well drained	☒ Mesic
□ somewhat poorly drained	□ Wet-mesic
□ poorly drained	□ Sub-hydric
□ very poorly drained	□ Hydric

ASSESSMENT AND NOTES

Write a brief word picture of community. Describe the representativeness of the plot to the vegetation type being sampled and any variation within the occurrence in terms of vegetation structure, floristics, and environment. Note vertical stratification or horizontal zonation patterns. Describe dominant and characteristic species and inclusion communities (if present). If community occurs as a mosaic describe spatial distribution and associated community types. Include landscape context information (adjacent communities). Describe any special or unusual features of the vegetation or habitat. If possible, note the origin and (for moderately even-aged forests) approximate age of the stand. Record the presence at the site of species not sampled in the plot. Note, where appropriate, the approximate distance and direction to water sources, such as river channels, perennial streams, intermittent streams, and seepage or runoff areas. For riparian and other wetland sites note the height of primary and secondary water marks and/or the presence of fluvial features.

Located on an apparent colluvial bench/terrace about halfway around The Whispering Waters Loop Trail at Grindstone Campground, this forest exhibits a diminished array of woody species (due to historic landuse and non-anthropogenic landforms) and an exceptionally rich herbaceous component. 60 species, not including sedges, rushes, and grasses, were noted in the plot and the terrain surrounding it in the herbaceous layer alone and the ground was nearly fully covered by flora. An even mix of dozens of species combine to dominate this layer, with Allium tricoccum, Erythronium americanum, and Viola canadensis leading the way. The shrub layer and lower canopy were rather depauperate and open, with Fagus grandifolia, Acer saccharum, and Aesculus flavula being dominant. The middle canopy contained 16 individual trees, with Acer saccharum being dominant (75% of the total count). The upper canopy was dominated by Tilia americana, Fagus grandifolia, and Betula spp., with Fraxinus being close behind. Estimated age of the forest is 75-100 years old, and significant variation is present as one approaches streams & seepages to the north and south. Magnolia fraseri, Rhododendron maximum, and Quercus rubra are co-dominant in some areas closer to the toe slopes near streams.

Representative Community Type: Southern Appalachian High-Elevation Rich Cove Forest

USNVC CEGL Code: CEGL004973 **Global/State Ranks:** G3/S2

CENTER FOR URBAN HABITATS

Forest Stratum Field Form

PLOT #: MRNR-01 | **Stratum (Circle one):** Upper Middle Lower Shrub Herbaceous Other | **Stratum Codes:** H

PLOT NAME: Grindstone, Whispering Waters

PROJECT: MRNR, Saturday Program

RECORDER (s): Multiple | **DATE:** 5-7-2016

Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants), S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'

Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.

Frequency: Count every individual in the Forest Layer and put total here.

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range (min-max)*
				Asarum canadense	Wild Ginger	4			
				Prosartes lanuginosa	Yellow Mandarin				
				Dicentra canadensis	Squirrel Corn				
				Trillium erectum	Wake Robin				
				Tiarella cordifolia	Foam flower				
				Hydrophyllum virginianum	Virginia Waterleaf				
				Erythronium americanum	Trout Lily				
				Anemone quinquefolia	Wood anemone				
				Allium tricoccum	Ramps				
				Deparia acrostichoides	Silvery Spleenwort				
				Polystichum acrostichoides	Christmas Fern				
				Acer saccharum	Sugar Maple				
				Aesculus flava	Yellow buckeye				
				Fagus grandifolia	American beach				
				Caulophyllum thalictroides	Blue Cohosh				
				Viola canadensis	Canada Violet				
				Polygonatum biflorum	Solomon's Seal				
				Uvularia perfoliata	Perfoliate Bellwort				
				Viola pubescens var. scabriuscula	Smooth Yellow Violet				
				Actaea racemosa	Black Cohosh				
				Carex blanda	eastern woodland sedge				
				Viola blanda	Sweet White violet				
				Sanicula canadensis	black snakeroot				
			✓	Osmorhiza longistylis	Aniseroot				
				Claytonia caroliniana	Carolina Spring Beauty				
			✓	Laportea canadensis	Wood Nettle				
			✓	Galium triflorum	Fragrant Bedstraw				
				Eurybia divaricata	White Wood Aster				
			✓	Viola sororia	Blue violet				
				Epifagus virginiana	Beech drops				
				Arisaema triphyllum	Jack in the Pulpit				

Data to be gathered in 2017

Canada Mayflower

Pattersnake fern

CENTER FOR URBAN HABITATS

Forest Stratum Field Form

PLOT #: MRNR-01

Stratum (Circle one): Upper Middle Lower Shrub (Herbaceous) Other

Stratum Codes: H

PLOT NAME: Grindstone, Whispering Waters

Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants), S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'

PROJECT: MRNR, Saturday Program

Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.

RECORDER (s): Multiple

DATE: 5-7-2016

Frequency: Count every individual in the Forest Layer and put total here.

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range (min-max)*
				Maianthemum canadense	Canada may flower				
				Botrypus virginianus	Rattlesnake fern				
				Viola pbescens var. pbescens	downy yellow violet				
				Hydrophyllum canadense	Canadian waterleaf				
		✓		Trillium undulatum	Painted Trillium				
				Conopholis americana	squaw root				
				Osmorhiza claytonii	sweet cicely				
		✓		Streptopus lanceolatus	rosy Twisted stalk				
		✓		Actaea pachypoda	white baneberry				
				Hyperzia lucida	shining clubmoss				
		✓		Mitchella repens	partridge berry				
		✓		Chimaphila maculata	Striped wintergreen				
		✓		Dendrolycopodium obscurum	common groundpine				
		✓		Viola hastata	halberd leaved violet				
				Viola rotundifolia	round-leaved violet				
				Dryopteris intermedia	evergreen woodfern				
			✓	Dryopteris celsa	log fern				
		✓		Clintonia borealis	yellow clintonia				
		✓		Maianthemum racemosum	Solomon's plume				
		✓	✓	Prenanthes roanensis	Roan Mtn. rattlesnake root				
		✓	✓	Prenanthes trifoliolata	gall-of-the-earth				
		✓		Geranium maculatum	wild geranium				
		✓		Medeola virginiana	Indian cucumber root				
		✓		Rubus canadensis	smooth blackberry				
				Viburnum lantanoides	hobblebush				
			✓	Eurybia chlorolepis	mountain wood aster				
			✓	Agastache altissima - var. roanensis	Appalachian wh. snakeroot				
			✓	Luzula spp.	woodrush sp. unid.				
		✓		Carex pensylvanica	Pennsylvania sedge				

Data to be gathered in 2017

Incomplete

CENTER FOR URBAN HABITATS

Forest Stratum Field Form			
PLOT #: MRNR-01	Stratum (Circle one): Upper Middle Lower Shrub (circled) Herbaceous Other	Stratum Codes: S	
PLOT NAME: Grindstone, Whispering Waters		Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants), S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'	
PROJECT: MRNR, Saturday Program		Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.	
RECORDER (s):	DATE: 5-7-2014	Frequency: Count every individual in the Forest Layer and put total here.	

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range (min-max)*

Incomplete

CENTER FOR URBAN HABITATS

Forest Stratum Field Form					
PLOT #: MRNR-01	Stratum (Circle one): Upper Middle **Lower** (circled) Shrub Herbaceous Other	Stratum Codes: T1			
PLOT NAME: Gravestone, Whispering Waters		*Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants), S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'*			
PROJECT: MRNR, Saturday Program		*Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.*			
RECORDER (s): -	DATE: 5-7-2016	*Frequency: Count every individual in the Forest Layer and put total here.*			

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range (min-max)*

CENTER FOR URBAN HABITATS

Forest Stratum Field Form

PLOT #: MRNR-01

Stratum (Circle one): Upper (Middle) Lower Shrub Herbaceous ~~Other~~

Stratum Codes: T2

PLOT NAME: Grindstone, Whispering Waters

Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants) , S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'

PROJECT: MRNR Saturday Programs

Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.

RECORDER (s): Nathan Wheeler DATE: 5/7/16

Frequency: Count every individual in the Forest Layer and put total here.

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range (min-max)*
				Acer saccharum	Sugar Maple	4	16	75%	3.5-9.6
				Aesculus flava	Yellow Buckeye	1	1	6.25	5.3
				Fagus grandifolia	American Beech	1	1	6.25	10.8
				Tilia americana	Basswood	1	1	6.25	6.5
				Betula alleghaniensis	Yellow Birch	1	1	6.25	7.3
		✓		Magnolia fraseri	Fraser's magnolia	—	—	—	—
		✓		Tsuga canadensis	eastern hemlock	—	—	—	—
		✓		Betula lenta	black birch	—	—	—	—

19.5 10

37.3 22.8

32.8

find max, min within plot

Female eastern Tiger Swallowtail

check for 67 feet →

tan 4.5 angled incline
tan 48.3
* dist 60 ft from tree
67

67
4.7
71.7

Forest Stratum Field Form					
CENTER FOR URBAN HABITATS	PLOT #: MRNR-Ø1	Stratum (Circle one): Upper (circled) Middle Lower Shrub Herbaceous Other	Stratum Codes: T3		
	PLOT NAME: Grindstone, Whispering Waters		Maximum plant height: N = Nonvascular Flora, H = 0-2' (all herbs + woody plants), S = 2'-20', T1 = 21'-32', T2 = 33'-66', T3 = 67'-115', T4 = >115'		
	PROJECT: MRNR Saturday Program		Cover Classes: 1 = trace, 2 = a few (<1%), 3 = 1-2%, 4 = 2-5%, 5 = 5-10%, 6 = 10-25%, 7 = 25-50%, 8 = 50-75%, 9 = 75-100%. Record cover values for each stratum AND for total cover in entire sample.		
	RECORDER (s): —	DATE: 5-7-2016	Frequency: Count every individual in the Forest Layer and put total here.		

NN	Pic	Out	?Id	Latin	common	Cover Class	Freqency	Relative Frequency (%)	DBH *range* *(min-max)*
				Tilia Americana	Basswood (White?)	7	6	27%	11.7-22.6
				Fagus Grandifolia	American beech	6	6	27%	24.4-37.6
				Betula Aleghaniensis	Birch, Yellow	6	5	23%	15-19
				~~Dead~~	~~Northern Red Oak? Snag~~		~~Dead~~ DSF		
		✓		Acer Saccharum	Sugar Maple				
				Aesculus flavula	Yellow buckeye	1	1	4.5%	11.6
				Fraxinus Americana	White Ash	6	3	14%	14-23.5
				Magnolia Acuminata	Cucumber Tree	1	1	4.5%	?
		✓		Quercus rubra	northern red oak				
		✓		Betula lenta	black birch				
							22		

DBH measured ✓ TBD ✓

General Species Inventory

Fauna

Plot: NRNR-01

PROJECT: Grindstone, Whispering Waters; NRNR Saturday Program **Date:** 5-7-2016 **Observers Inititals:** –

NN	Pic	Id?	*latin*	common	Zone	*Life Form*	Notes
				black capped chickadee			
				White Breasted NUTHATCH			
				CROW			
				BLACK THROATED GREEN WARBLER			
	✓			eastern tiger swallowtail			
				Junco			
		✓		click beetle			
		✓		brown cricket			
		✓		black ant			
		✓		house fly			
				red eyed vireo			
		✓		white, small moth/butterfly			
		✓		blk stripe/red legs/sides centipede			
		✓		tiny red spider			
		✓		copper skipper			??
		✓		two-lined salamanders			(blue ridge two-lined)
		✓		tiny black spider white spots on abdomen			
		✓		black body, orange wings fly			
		✓		yellow bodied fly			
		✓		common gnat			
		✓		tan spider dark brown stripe spider			(Blue Ridge two-lined)
		✓		small blk. beetle			
		✓		black beetle, orange tint			
		✓		orange butterfly			
				juvenal's duskywing			
	✓			Unid. fungi 1			
	✓			Unid. fungi 2			