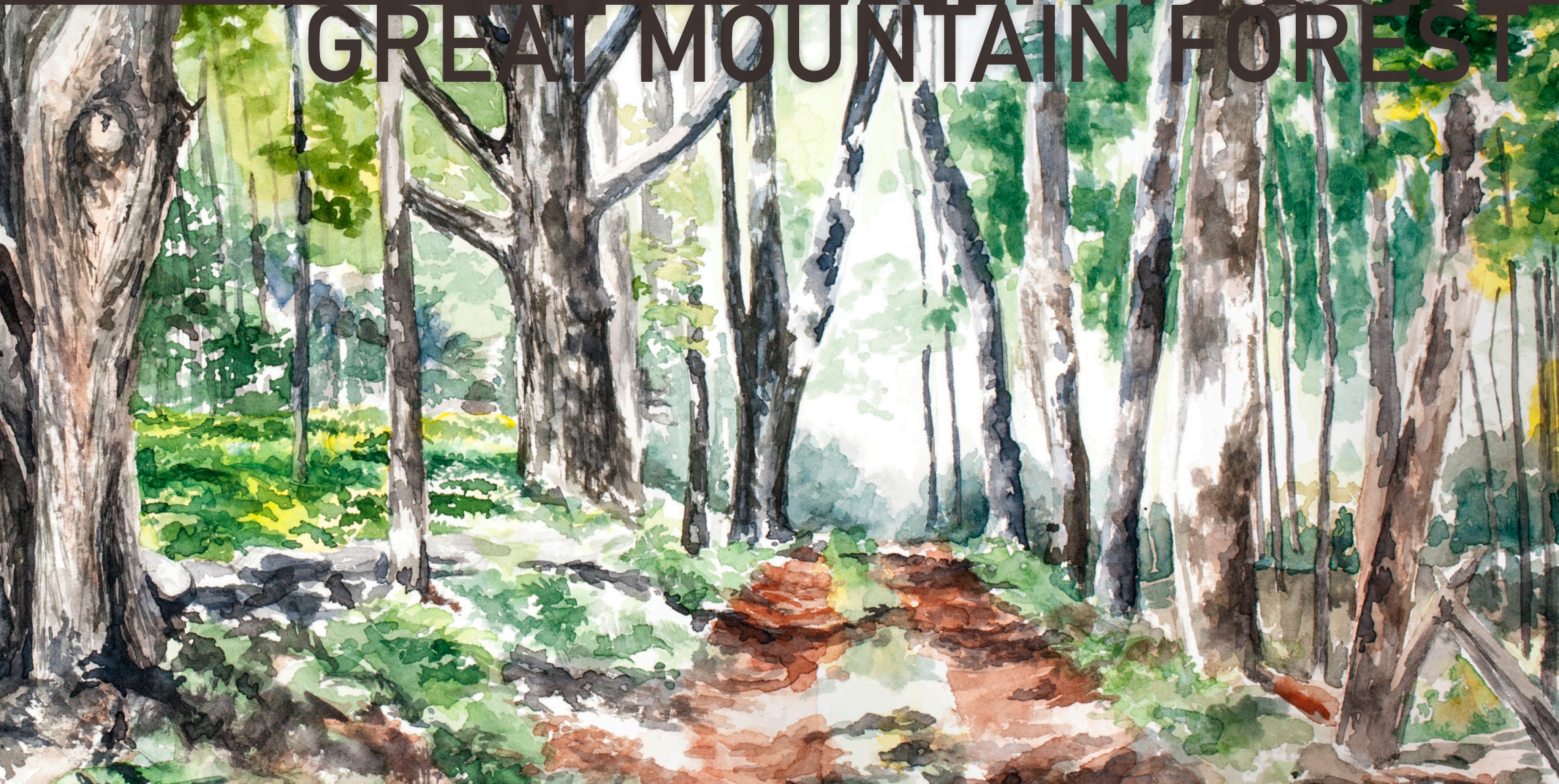


A FIELD BOOK
GREAT MOUNTAIN FOREST



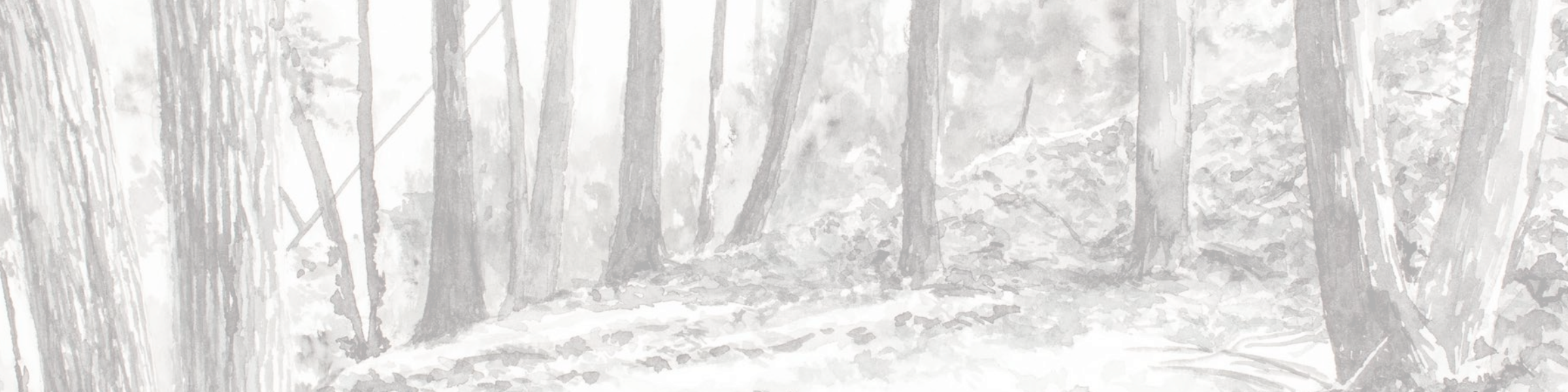
Text by Michael Gaige and Yonatan Glogower

Photographs by Michael Gaige, Yonatan Glogower, and GMF

Watercolors and Design by Autumn Von Plinsky

Copyright © Yale Global Institute of Sustainable Forestry, 2016

All Rights Reserved



FIELD MARKS

OF GREAT MOUNTAIN FOREST

When we identify a bird, we typically look for field marks such as wing bars and eye stripes, or behaviors such as tail-bobbing. These features help us identify the species of bird and learn more about it. By looking for field marks of a landscape, we can learn to identify the history or factors shaping that landscape.

Following is a guide to field marks of GMF's landscape. By learning to interpret these features, one will understand the landscape and history of GMF more completely. Each field mark contains a photo and brief description as well as suggestions for further exploration in the document, and by extension GMF. This guide is meant to also serve as a stand-alone piece that can be given to GMF users to enrich their experience.

COPPICED TREES

Coppiced trees are those that were once cut and subsequently re-sprouted. When a stump re-sprouts it sends dozens of stems up from the outer ring of the stump. Over time, the stems compete and typically two or three stems remain. A larger stump, or one that has been coppiced many times, will have more trunks. In GMF most of the coppiced trees are red oaks cut during the charcoal days of the late-1800s. Fire can also cause a tree to coppice. See the Land Use section.

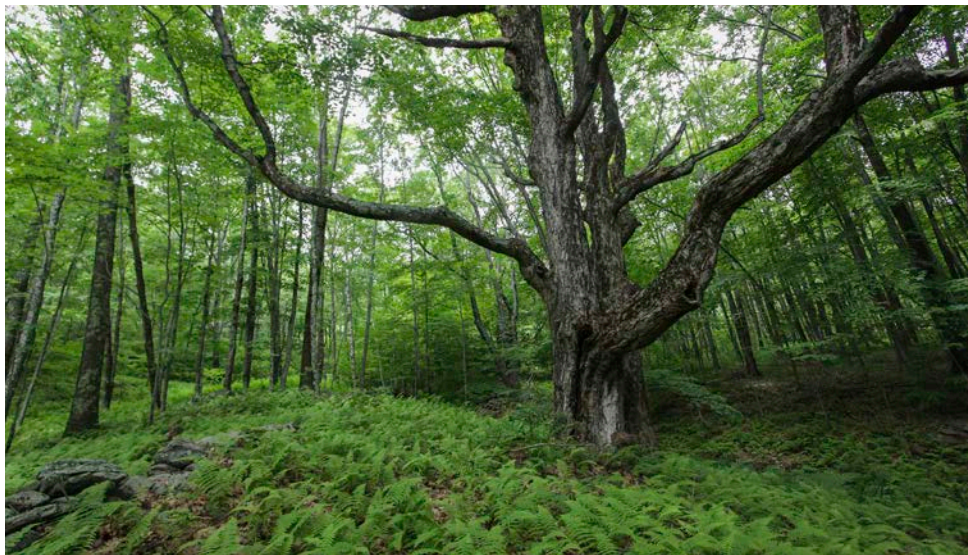
LEGACY TREE

Legacy Tree, also known as “wolf trees,” typically have larger diameters, spreading horizontal branches, and complex form that surrounding

forest trees lack. Such trees grew for some time in an open setting, typically a pasture. Full sun allowed them to grow “out” as well as “up.” In GMF legacy trees are often sugar maples, and sometimes oaks, black cherry, and others. In pastures they provided shade for livestock. Today they provide structure for wildlife. See the Dorman site for more.



Coppiced trees at Great Mountain Forest.



Legacy tree at Great Mountain Forest.

OLD TREES

Old trees can be identified by their size, bark characteristics, and the shape of the upper branches. At left is an old growth white oak. It is not large, but the sinuous trunk, wavy and truncated upper branches, and smooth basal bark (not visible here) identify it as a tree over 250 years. At right, an old growth hemlock tree is identifiable by the green crustose lichen on the bark. This occurs only on hemlocks 300 years or older. See the Old Growth section in Natural Communities for locations and description.





OLD FIELD WHITE PINE

Old-field white pine stands occur on abandoned pastures and crop fields of GMF. Stands dominated by even-aged white pines with lots of dead branches on the trunk of the tree indicate trees having grown in the open. Often, some trees will split into two or more trunks, a result of the white pine weevil. The lower portion of the Stoneman Trail, the old Norfolk Downs, and other areas around the edges of GMF contain old-field pines.



PLANTATIONS

Plantations of exotic and some native species occur in GMF. Plantations were established in the 1940s and 1950s on (then) recently purchased agricultural lands, taking advantage of ready ground and abundant sun. This image, of a Norway spruce plantation along the Jean Trail, contains a stone wall from the agricultural days. Plantations, unlike a forest, typically have little diversity. Plantations can be found along Chatleton Road and GMF lands nearer to Norfolk.

GIRDLED PINE

Girdled pines occur in several plantations and naturally seeded white pine stands in GMF. A forester intentionally killed these trees because they had poor form, were an undesirable species, or were utilizing space the forester wanted for something else. Here, the white pine was girdled to make way for a Norway spruce plantation. The tree could have been cut and removed, but girdling it leaves a standing dead tree – excellent for wildlife. Note the X on the trunk. See the Dean Farm on Jean Trail site and Stoneman trail for examples.



Girdled pine at Great Mountain Forest.



Early successional stands at Great Mountain Forest.

EARLY SUCCESSIONAL STANDS

Early Successional stands occur where there has been recent disturbance, such as timber harvesting, or abandonment of open land. The small diameter, even-aged trees indicate they all came up together. In this stage, as in the photo, the trees are growing rapidly in competition for sun. Most trees will die, being excluded from the canopy by more vigorous trees. Typical early successional species include paper birch, black cherry, black birch, and oaks. See Norfolk Downs in the Land Use section.

STONE WALLS

Stone walls are common at GMF mainly along the settlement roads (Chattleton, Meekertown). They indicate agriculture from plowing or pasture. Most walls were fences, built to keep animals in or out of an area. Large stones comprise such wall and typically had a rail on top. Field walls, comprised of small and large stones, occur where stones were removed from a field for crop production. There are over 5-miles of wall in GMF. See Dorman site, Southwest Stone wall site. Each has over a mile of wall.



Stone wall at Great Mountain Forest.



Clearance cairn at Great Mountain Forest.



Cellar Hole at Great Mountain Forest.

CELLAR HOLES

Cellar holes are occasionally found in GMF and are most often located near the roads. Cellars served as foundations for houses and doubled as cool storage for food. The Chatleton, Meekertown, and #4 roads all have cellar holes. Some cellars are well-preserved, while others are barely discernable beyond a depression in the ground. Examples of cellars can be found at Potter's corners, Dorman, Mansfield and others in the Land Use section.

CLEARANCE CAIRNS

Clearance cairns result from the removal of stones in agricultural fields. Instead of being moved to a fence or wall, the stones are typically placed on top of a larger, unmovable stone. Clearance cairns occur in both crop fields and pastures. Often, the stones are later moved (in winter) to a wall or fence. In GMF clearance cairns often contain only a few stones. Most of the settlement sites contain cairns. The Dorman, Dean, and Mansfield sites contain several.



Stone wall at Great Mountain Forest.

CHARCOAL HEARTHES

Charcoal hearths are abundant in GMF with perhaps a few hundred scattered around the forest. The smooth, flat ground in a ~30-foot diameter circle, etched into a hillside makes them unmistakable. Digging through leaf-litter on the edges often reveals charcoal. The flat area is typically devoid of vegetation due to soil chemistry changes. Typically, the hearths are clustered, with several in close proximity to each other. See the Land Use site for Charcoal hearths.

COLLIER FIREPLACES

Collier Fireplaces are rare finds in GMF. This one is in excellent condition, where as most have collapsed and are being taken over by trees and shrubs. The fireplace shown here is of typical construction. Around this, a hut made of wood and bark was built for two colliers. For two weeks they would watch over the hearths located a short distance from the hut.



Collier fireplaces at Great Mountain Forest.



Barbed-wire fence at Great Mountain Forest.

BARBED-WIRE FENCES

Barbed-wire fences are relatively uncommon throughout most of GMF. Like stone fences, they were strung to keep animals in or out of an area. Barbed wire was invented and popularized in the 1870s. Prior to that, if a fence occurred it would have been wooden or stone. Barbed wire can be found along the Jean Trail and the Dorman site, among a few other areas.

SMOOTH GROUND

Smooth ground, as seen here, is an important field mark found around old settlements in GMF. Forests that have never been cleared will have lumpy and bumpy ground as a result of falling trees moving soil, and from rocks. When the ground is smooth, even if on a slope, it indicates past land use and clearing. The site pictured here was pasture about 80-years ago. In GMF sites with old field pines, plantations, or stonewalls also often have smooth ground.



Smooth ground in Great Mountain Forest.

ROCKY GROUND

Rocky ground, shown below with boulders, in addition to its glacial legacy, often occurs on sites that have never been opened to agriculture. Talus slopes and boulder fields were occasionally grazed, but they often remained wooded. See Talus Slope in Natural Communities.

BEDROCK

Bedrock at the surface indicates shallow soils and sites that may have been over-grazed, or burned and the soil eroded. Often bedrock is not clearly visible, but bald or barren communities dominated by low-bush blueberry, grasses, haircap mosses, or *Cladonia* spp. lichens (seen here) will dominate. Some lichen communities can be 200 years old. Smooth rounded bedrock is also an indicator of glacial activity. See Balds and Rocky Outcrops in the Natural Communities section.



Rocky ground with boulders.



View of bedrock in Great Mountain Forest.



Carpet of Canada May-flower.

CANADA MAY-FLOWER

Canada May-flower (*Maianthemum canadense*) carpeting the ground as seen here is a good indicator of previous pasture at GMF. It is a woodland flower that prefers acidic, slightly dry sites, and also dominates now-forested old fields. Here it is seen with a stand of old field pines. While birds and mammals disperse the seeds, on old-field sites reproduction by rhizomes is common.

JAPANESE BARBERRY

Japanese Barberry (*Berberis thunbergii*) emerging in an old field white pine stand in GMF. Japanese barberry is perhaps the most widespread exotic invasive in GMF. Its presence indicates old pastures or agricultural lands. Unfortunately, barberry was often planted as part of early efforts for promoting turkey habitat. The toxic foliage and thorn-covered twigs are not eaten by deer or moose.



Japanese barberry.

APPLE TREES

Apple trees (*Malus domestica*) are not native to North America. Their presence in the forest indicates previous settlement even when other signs of habitation such as a cellar hole may be absent. Unlike other exotic species, apples rarely reproduce in the wild. They offer excellent food resources to animals so are considered desirable features for forest management.



Apple tree in Great Mountain Forest.