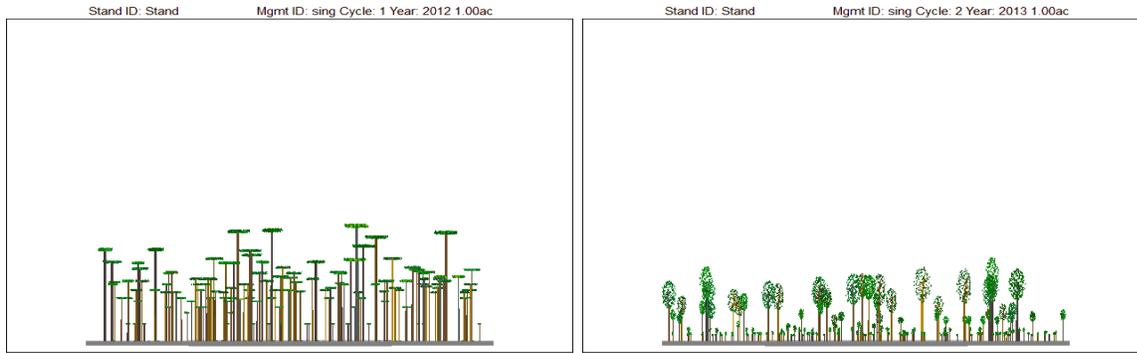


Sparta Mountain WMA Forest Stewardship Year 1 (2018) Activities

Stand 33 – Restore Old Growth Structure

Prescription: Variable retention forest management using a combination of single tree selection and group selection is prescribed in Year 1 of the Sparta Mountain WMA Forest Stewardship Plan for <17 acres in Stand 33 (see pages 64-67 in the plan). Chainsaws or hatchets will be used to mechanically girdle or fell trees, and all felled trees will be left on site. Trees marked for felling/girdling are either in declining health or unlikely to persist under the site conditions of a climax forest ecosystem. Primary access will be from Route 23 in the north. No heavy machinery or herbicides will be used for cutting or girdling. Tree felling will be conducted prior to April 1, 2018 but may resume after November 15, 2018.

Purpose: The management objective is to accelerate old growth attributes within a forest type that is better suited to developing a climax forest. This system mimics the natural regeneration processes of an old-growth forest through a concept known as “gap-phase replacement”. Gap-phase replacement means that the small canopy gaps created via the death (natural or anthropogenic) of individual or small groups of trees provide opportunities to release preexisting shade tolerant trees, or to stimulate some new shade tolerant regeneration. The proposed treatment of this stand is aimed at maintaining its ecological integrity; specifically the shade tolerant and potentially moisture sensitive species composition. Uneven-aged management entails the continual recruitment of new cohorts of trees into the stand, eventually having three or more age classes existing at any given time. Proper implementation requires removal of trees from all size classes to avoid skewing the residual tree distribution into a singular stand structure. Trees targeted for removal are those declining in health, or those unlikely to persist under the site conditions that are perpetuated under a climax forest ecosystem. The small openings also present opportunities for moisture sensitive herbaceous plants to benefit from additional, but moderate amounts of light that are often associated with increased flowering and seed production. In short, this system enhances stand complexity while buffering the short-term, but extreme, changes to the site conditions experienced under some other silvicultural and natural disturbances. Proactively manipulating the stand, rather than waiting for natural mortality to occur, helps to increase the forest’s resiliency to the sometimes more severe impacts resulting from natural causes (e.g. severe storm events or widespread pathogen outbreaks). Below find a Stand Visualization Simulator (SVS) depiction of pre- and post-treatment, respectively.



Site Description: This project site is located in the far northeastern section of property, roughly 500+/- feet west of Tamarack Lake in Hardyston Township. The treatment site's primary access is from Route 23 in the north.

The area is a gently sloping hillside roughly 17 acres in size, has an irregular border, and is predominately oak/hickory. The stand is comprised of Hollis Rock Outcrop/Chatfield Complex soils with scattered large boulders. Generally the soil is rocky, well rooted and highly unlikely to erode post treatment. Most trees are pole to small sawlog sized. The configuration of the treatment follows both land contours and clear forest type boundaries. Topography is mostly gentle, with some undulations in terrain and areas with large rock outcrops and boulders. The northern extent of the site is flat and has an established access road.

Preliminary site visits indicate that the general location has a relatively diverse woody shrub understory, native grasses and other herbaceous plants. Most of the advanced tree regeneration is comprised of shade intolerants awaiting release. The site has very few non-native invasive species, so any post treatment germination will be highly controllable before becoming widespread. Inventory data suggests the following forest composition:

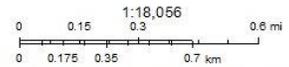
	Total	Red Oak	Ches Oak	Red Mpl	Mock Hick	Wh Oak	Beech	Wh Ash	Bl Birch	Sug Mpl
Basal Area	110.8	38.1	31.2	9.2	8.1	5.8	4.6	3.5	3.5	3.5
Stems/Ac	270.5	86.2	40	30	17.3	9.8	17.7	9.6	18.4	37.3
Quad. DBH	8.7	9	11.9	7.5	9.2	10.4	6.9	8.1	5.9	4.1
Net Bdft/Ac	3,772	1,779	1,462	92	168	89	0	0	0	92
Net Cords/Ac	21	8	7	1	1	1	1	1	0	0.5

Sparta Mountain WMA Forest Stewardship Year 1 Activities: Stand 33 - Restore Old Growth



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- Stand 33 - 2018 old growth
- State Open Space
- Transportation - Roads



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