

# SPARTA MOUNTAIN WILDLIFE MANAGEMENT AREA (WMA) SITE VISIT REPORT

On Tuesday, February 21<sup>st</sup>, 2023, Highlands Council staff Kelley Curran (Science Manager), Alex Hascha (Resource Management Specialist), James Humphries (Director of Planning, Science & GIS), and Carolyn Klaube (Senior Natural Resources Specialist) joined Senior Zoologist Sharon Petzinger (NJDEP) at Sparta Mountain Wildlife Management Area. The purpose of this site visit was to give Highlands Council staff the opportunity to directly observe the forest management activities outlined in the approved Sparta Mountain Forest Stewardship Plan.

The Forest Stewardship Plan for Sparta Mountain recommends five silvicultural practices be used to achieve the desired goals, however in the 2021 Addendum to the Plan, only two silvicultural practices will be used. This first practice is a shelterwood cut. This silvicultural practice is used when partial canopy cover is needed to aid in the regeneration of desired species. In the case of Sparta Mountain, oak and hickory were the desired tree species. Ideally, the treatment is done over the course of three cuttings, with each cut opening more of the canopy to allow more light to reach the forest floor for regeneration below. At Sparta Mountain, only one cut was conducted for the shelterwood treatments.

The other silvicultural procedure that will be used under the Forest Stewardship Plan for Sparta Mountain is a Seed Tree cut. This cut involves the removal of all but a few trees on the site. The trees that remain act as a seed source for natural regeneration on site. When choosing the trees that will remain, it is important to select trees that are healthy and large enough to produce adequate seed. This type of cut is used in areas where full sunlight is required for the desired regeneration, as well as in areas where the soil seed bank is questionable or unknown.

The first site visited was the Stand 9 Shelterwood cut completed in the winter of 2021/2022. This cut reduced the basal area from 125 sq. ft/acre to 40 sq. ft/acre. Basal area is the cross-section measurement of a tree stem at breast height (4.5 feet). This site had moderate slope and experienced light to moderate deer browse on remaining woody material within the deer browse line. Natural regeneration was evident for a few woody species. There was little to no presence of invasive plant species at this location. There was no visible rutting caused by logging machinery and all trails used by machinery were covered by residual brush. (See Photos 1 and 2 below).



*Photo 1. Stand 9 Shelterwood 21/22*



*Photo 2. Stand 9 Shelterwood 21/22*

Site 2 was the Stand 18 Shelterwood cut that was completed in the winter of 2014/2015. This stand originally had a basal area of 114 sq. ft/acre which was reduced to a BA of 30-40 sq. ft/acre. The slope on this site was similar to that of Stand 9. This stand had healthy natural regeneration and little impact from deer browsing. Oak and hickory seedlings dominated the understory along with native woody shrubs and blackberry canes. According to Sharon Petzinger (NJDEP), this site is progressing exactly as intended and the NJDEP Division of Fish and Wildlife is pleased with the results. Invasive species were not observed in any abundance on this site during the site visit. (See Photos 3 and 4 below)



*Photo 3. Stand 18 Shelterwood 14/15*



*Photo 4. Stand 18 Shelterwood 14/15*

Site 3 was the stand 18 Seed Tree cut which was completed in the winter of 2012/2013. An initial basal area was not given. The site was originally stocked with trees mostly less than 12" in diameter with a stem count of 461 stems/acre. The treatment process reduced the stand density to a basal area of 10-20 sq. ft/acre. The site had mild slopes and was near Edison Bog. Oak and hickory saplings comprise the majority of the understory with other early successional species mixed in lower numbers. (See photos 5 and 6 below)



*Photo 5. Stand 18 Seed Tree 12/13*



*Photo 6. Stand 18 Seed Tree 12/13*



The 4th site of the day was the stand 18 seed tree cut that was completed in the winter of 2022/2023. This site originally had a basal area of 119 sq. ft/acre and was reduced to a basal area of 24 sq. ft/acre. This site was treated in the fall and winter of 2022/2023 and has not yet experienced regeneration. This site is in an area with moderate slope. Woody materials (treetops, branches, non-saw logs) were retained in such great volume on site that the New Jersey Forest Service required it to be spread out as to reduce the risk of wildfire. Access roads used by machinery were still visible and areas of rutting had been restored before the contractor left the site. In one area, the road path had to be altered, however the contractor covered the area with residual brush before departure to make it less obvious. (See photos 7 and 8 below)



*Photo 7. Stand 18 Seed Tree 22/23*



*Photo 8. Stand 18 Seed Tree 22/23*

Site 5 was the proposed site for the fall/winter 2023/2024. There has been no forestry related activity on this stand yet. The proposed activity for this stand will be a modified seed tree cut that will retain a basal area of roughly 20 sq ft/acre. The site is currently dominated by oaks and hickories with diameters in the 10-to-15-inch range, with larger trees present on the site in low numbers. There is limited understory growth on the site. (See photos 9 and 10 below)



*Photo 9. Stand 7 Pre-Treatment 23/24*



*Photo 10. Stand 7 Pre-Treatment 23/24*

The 6<sup>th</sup> and final site of the day was the Stand 8 seed tree cut that was completed in the winter of 2019/2020. This stand originally had a basal area of 116 sq. ft/acre which was reduced to a basal area of 18.8 sq. ft/acre after treatment. This site had moderate slopes and there was woody debris distributed evenly across the site. There was natural regeneration of desired species occurring on the site. Machine trails created on this site were still visible but there was no sign of rutting. (See Photos 11 and 12 below)



*Photo 11. Stand 8 Seed Tree 19/20*



*Photo 12. Stand 8 Seed Tree 19/20*

Overall, this site visit/tour of Sparta Mountain Wildlife Management Area was beneficial to Highlands staff as it allowed us to see first-hand the work that was being conducted in accordance with the approved Forest Stewardship Plan. In addition, according to annual data collected by Sharon Petzinger (NJDEP), the number of bird species observed post-treatment is significantly more when compared with the number of bird species observed pre-treatment. This is one indicator that the silvicultural practices applied to the specified Stands in Sparta Mountain Wildlife Management Area have proven to be successful.