Forest Management Plan for

Tri-Creek

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Objectives:

Follow BMPs regarding ravines, wetlands, and stream buffers

Improve: wildlife habitat, vertical & horizontal structure, age class structure, aesthetic quality, and profit

Decrease: diseased or infected trees, invasive species, and BA in specified areas

Current Stand Conditions:

Current site conditions are composed of a diverse publicly owned stand in the driftless region of Wisconsin. The majority of the property is on sloped upland with many exposed sandstone outcroppings, on southern aspect we tend to see more xeric conditions typically like southern Wisconsin. Species such as oak (*Quercus alba* and *Quercus rubra*), black cherry (*Prunus serotina*), birch species (*Betula spp.*), both shagbark (*Carya ovata*) and bitternut hickory (*Carya cordiformis*) are present. On north aspect we tend to see a composition similar to northern hardwoods. Being more shaded and mesic with sugar maple (*Acer saccharum*), red maple (*Acer rubrum*) and basswood *(Tilia americana*) being the predominate species. Due to being in being in bluff country we have multiple streams and washouts within the ravines throughout the stand. This creates wetland areas in the lowlands predominately occupied by aspen (*Populus grandidentata* and *Populus tremuloides*). Lastly, some of the ridge tops were previously farmed and now have been converted to planted red pine (*Pinus resinosa*) plantations. Also sparsely scattered throughout the stand invasive species have been observed. Another note of concern is that emerald ash bore is present on site and already has impacted the stand and oak wilt is present and a concerning issue due to the vast number of oak species on site.

Desired Stand Conditions:

Our overall goals with this management plan are to improve wildlife habitat, vertical & horizontal structure, age class structure and decrease invasive species and the spread of disease. We will promote high structural diversity with irregular shelterwood cuts being applied throughout a majority of the stand as well as coppice cuts and red pine thinning. We will apply both dispersed and clustered retention pockets to control the spread of oak wilt selecting for white oak over red oak when possible. Ash will be designated throughout the entire stand to be removed if access is available because emerald ash borer is present on the site. Minimizing the spread of invasive species, like buckthorn, garlic mustard and honeysuckle from the site and hopefully keep them under control enough to promote the regeneration of native species. We would also like to increase the usability of the wildlife habitat on the site. The openings within the stand will provide a place for white-tailed deer (*Odocoileus* virginianus) forage, mating, protection, and fawning. The reserved forested areas will also provide them with thermal cover, protection, and forage. There is even potential for some RTE species to inhabit the site. With the lowland,

ravines, mixed age forest and open pockets, four rare, threatened, or endangered species could be present on this site. These components will also increase the aesthetics of the site.

Plan:

Irregular shelterwood: This treatment will focus on establishing mixed hardwood regeneration to favor a broader range of wildlife. In order to improve the wildlife habitat and structure of the stand, we are recommending an irregular shelterwood in the south and west sides of the property, as shown on the site map. We will want to incorporate gaps into this area for wildlife and for regeneration, as well as reduce the BA down to around 60 - 100 sq/ft. Creating gaps and openings will be favorable for many species of wildlife such as woodcock. To accomplish this, we will be removing most of the red oak in this area to reduce the spread of oak wilt, however some large cavity red oak should be left for wildlife. White ash will be designated as well to prevent the spread of emerald ash borer. In some areas there are already high levels of regen in the understory, so opening the crown will allow these trees to grow. We will want to leave 2 to 3 seed trees per acre in this area of white oak and red maple for regeneration. The resulting new growth will also create browse for mammals and a foraging area for birds.

Coppice: Areas that have a dominant mature aspen overstory, a designated coppice cut will be applied in attempt to promote aspen regeneration. The pockets of aspen will create structural diversity and a food source for wildlife to utilize. Wildlife that will benefit from these pockets are deer, grouse, and other avian species. Deer will forage on young aspen shoots when food sources are sparce. Grouse prefer to nest near aspen coppices as they are a source of protection and food for young chicks. Other avian species like the vertical and horizontal diversity that the aspen coppice provides in the habitat, and they use that for foraging and protection.

Red pine thinning: Thin every third row of trees to allocate resources to kept trees. On areas with Red pine that had an east aspect, this tinning will also provide opportunities for roosting branches for turkeys. These areas warm up quicker in the mornings, benefits the turkeys. These areas also provide thermal cover for many different species of wildlife. The aspen coppice adjacent to these red pine stands provide valuable food sources that are close by the thermal cover.

Possible Invasive Species Treatment: With multiple invasives present on this property, precautions should be taken so further distribution of these invasives doesn't occur. Small amounts of Japanese Barberry were present on the site, foliar treatment can be used. Buckthorn was present mainly in the southeastern and southern part of the site along with honeysuckle. Foliar treatment can be used on buckthorn stems 3-4 feet high, anything higher than 5 feet can be basal barked if the stems are big enough. Honeysuckle can be cut stump treated. Lastly, first year garlic mustard was present in the south-central ravine, foliar treatment can be used, before the garlic mustard seeds out. Treatment should be done before the harvest occurs. After harvest a five-year watch should be implemented to watch for increased distribution of invasives.

Management Activity Schedule:

Invasive treatment occurs before harvest, garlic mustard specifically before it seeds out.

Oak being harvested during winter.

Seasonal restriction due to oak wilt, harvest allowed from July to the following April.

Site Map:

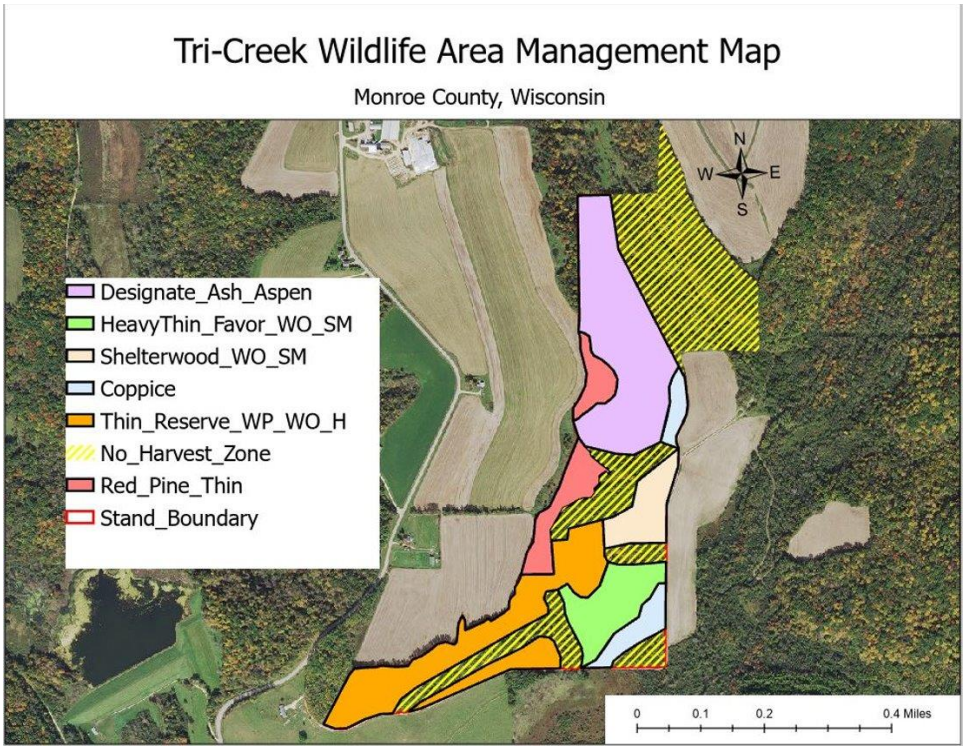

Figure 1:

This site exists within the southwest portion of Monroe County, WI. Due to the steep slopes and unique ecological features that we want to preserve, a large section of the property is a no harvest zone. This will follow BMPs for the critical environmental components present on the site and follow the seasonal restrictions limiting activity on the site (oak wilt, ephemeral wetlands, slope, etc.). We will also be using an irregular shelterwood along the southeast border of the property where timber harvest is feasible and beneficial for wildlife. The red pine thinning will focus on three pockets on the site's westward boundary. There are a few coppice patches on the western and southeastern boundaries. This will facilitate aspen regeneration. There is infected ash throughout the site that will be removed when accessible.