## Brule River State Forest

### 2012 Timber Sale Proposals

<table>
<thead>
<tr>
<th>Tract</th>
<th>Name</th>
<th>Species</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-12</td>
<td>Farmsted Birch</td>
<td>BW/OR/A</td>
<td>24</td>
</tr>
<tr>
<td>02-12</td>
<td>Ski Trail Patches</td>
<td>PW/BW</td>
<td>20</td>
</tr>
<tr>
<td>03-12</td>
<td>Hillside Combo</td>
<td>PR/BW/OX</td>
<td>77</td>
</tr>
<tr>
<td>04-12</td>
<td>Enterprise Oak</td>
<td>OR/MR/BW/A</td>
<td>32</td>
</tr>
<tr>
<td>05-12</td>
<td>Clevedon Refuge</td>
<td>SW/FB/A</td>
<td>44</td>
</tr>
<tr>
<td>07-12</td>
<td>Rush Lake Restoration</td>
<td>A/PR</td>
<td>28</td>
</tr>
<tr>
<td>08-12</td>
<td>Minnesuing Pine</td>
<td>PR</td>
<td>17</td>
</tr>
<tr>
<td>09-12</td>
<td>Hemlock Regen</td>
<td>O/MR</td>
<td>3</td>
</tr>
<tr>
<td>10-12</td>
<td>Prison Pine</td>
<td>PJ</td>
<td>61</td>
</tr>
<tr>
<td>11-12</td>
<td>Superior Birch</td>
<td>BW</td>
<td>32</td>
</tr>
<tr>
<td>12-12</td>
<td>Stoney Hill</td>
<td>PR/BW</td>
<td>46</td>
</tr>
<tr>
<td>13-12</td>
<td>Percival Creek Mix</td>
<td>NH</td>
<td>77</td>
</tr>
<tr>
<td>14-12</td>
<td>Culhane</td>
<td>A/AS</td>
<td>35</td>
</tr>
<tr>
<td>15-12</td>
<td>Jersett Reset</td>
<td>PJ/OX</td>
<td>165</td>
</tr>
<tr>
<td>16-12</td>
<td>Twin Birch</td>
<td>BW/FS/A</td>
<td>24</td>
</tr>
<tr>
<td>17-12</td>
<td>Wolf Pack Sale</td>
<td>PJ/A/PW</td>
<td>50</td>
</tr>
<tr>
<td>19-12</td>
<td>North Patch Popple</td>
<td>A</td>
<td>36</td>
</tr>
</tbody>
</table>

**Total** 771
This stand is located east of highway 27, just south of the town of Brule. It is located within Management Area 8 of the Brule River State Forest. The goals of this management area are to maintain current levels of aspen and birch while decreasing scrub oak. Currently this stand is about 85 years old and is composed of white birch and red oak, with a small component of aspen. Much of the white birch is experiencing dieback if it is not already dead; the oak is also showing signs of top dieback. The proposal for this site is to prescribe a regeneration harvest with some small retention patches spaced throughout the site. The patches will be placed around healthy, vigorous looking oak and white birch that will provide a seed source following the harvest. It is also recommended that the site be blade scarified post sale to promote white birch regeneration. There are no seasonal restrictions for this sale.
This stand is located south of highway 2 within the Afterhours Ski Trail system. The stand lies within Management Area 6 of the Brule River State Forest. The management objectives of this area are primarily recreation based, but also to maintain a scenic and diverse forest of conifers and hardwoods. Currently this stand is composed of white pine, white birch, oak and some aspen. This stand is about 80 years old and has no record of prior management. The proposal for this stand is to implement small patch regeneration harvests that would total about 20 acres. The patches would be about 2.5 acres in size and would favor mid-tolerant and longer lived species such as white pine, red oak, and white birch over aspen. The small patches would also minimize the aesthetic impacts of the harvest as they would likely not even been seen from the ski trail. The timing of this harvest is important as it cannot take place while the ski trails are open. Harvest will have to take place during a dry summer.
These stands are located between Hwy 27 and Samples Road in the Brule River State Forest. The stands lie within Management Area 8, a forest production area that has objectives of maintaining white birch levels and decreasing the scrub oak covertype. This proposal is made up of two distinct stands. The first is a red pine stand that is listed as 150 years old. Currently the basal area of the stand is around 200 sq.ft/ac. The proposal for this stand is to promote a late successional forest by lightly thinning the red pine and leaving the hardwood component in and around it. The second stand is a white birch/scrub oak stand that is currently about 60 years old. Much of the white birch is beginning to die back so this would be a good time to regenerate the stand and maintain the white birch covertype. The proposal for this stand would be to prescribe a regeneration harvest. The goal of this harvest would be to reduce the scrub oak and regenerate white birch. Ideally during harvest the ground will become scarified enough to facilitate white birch regeneration, but if it is believed that the forest floor is not adequately scarified for seedbed preparation post harvest scarification can be done. Scattered white pine that are found throughout the stand will be retained as a future seed source. There are no seasonal restrictions on this harvest, however the slope in some areas may limit harvest during wet seasons.
This stand is located east of Highway 27, about 5 miles south of the town of Brule. It is located within Management Area 8 of the Brule River State Forest. The goals of this management area are to maintain current levels of aspen and birch while decreasing scrub oak. This stand is about 80 years old and is composed of red maple, red oak, white birch and some small pockets of aspen. Currently much of the white birch on site is dead or in decline. The proposal for this site is to do a regeneration harvest while retaining some patches to serve as a seed source. The retention patches would be placed around high quality trees, especially any white birch that does not show signs of decline. These patches would then serve as a seed source following the harvest. To promote regeneration post-harvest scarification is recommended. There should be no seasonal limitations for this sale; however excessive wetness may limit operability. Care will be taken to minimize impacts on the North Country Trail.
Brule River State Forest

Clevedon Refuge - Tract 5-15
28 Acre Spruce and Aspen Regeneration and 5 Acre Spruce Thinning
T49N R10W Sec. 27, 34
Management Area 1: Superior Clay Plain-Native Community Management

These stands are located north of the intersection of Clevedon Road and Hwy 13 on the Brule River State Forest. The stands lie within Management Area 1 on the forest, the management objectives for this area are to manage the forest towards a dominance of white spruce, white pine, and white birch, with associates of balsam fir and aspen. This proposal includes two distinct stands, the southwest patch is a white spruce plantation that will be thinned, taking two rows and leaving three. The other two patches have a basal area of about 120 sq. ft/acre and are composed of white and black spruce (54%), balsam fir (20%), and aspen (12%) all of which are over mature (70+ years old) and beginning to fall over. In these stands the proposal is to remove all aspen and any spruce and fir that contain two or more 100" sticks. This will release any seedlings and saplings and will also create a favorable environment for the regeneration of spruce and balsam fir in the stand. These stands will be limited to winter harvest only. There are some small drainages that run through the stand, not harvest will take place within these and they will be buffered to prevent erosion.
These stands are located south of the town of Brule within the Brule River State Forest. The stands are located in Management Area 8, a forest production area, and surround a portion of Rush Lake. The Master Plan objectives for this area are to manage the forest surrounding Rush Lake in a natural state and to replicate natural disturbance. Currently these stands are composed of 24 acres of mature aspen that surrounds Rush Lake and a 4 acre red pine plantation on the north end of the lake. Rush Lake was designated a State Natural Area because of its unique interior beach community and its abundance of uncommon aquatic invertebrates. The proposal for this sale is to promote white, red and jack pine and reduce the dominance of aspen within the stand. The harvest prescription for the aspen stand is to remove the aspen (although several will be marked for retention across the sale area) and leave mature pine to act as a future seed source. To prevent aspen regeneration from out-competing pine regeneration a summer harvest would be planned followed by a prescribed burn the following year. This combination of treatments would drain the aspen’s root reserves and prevent dense regeneration. Following the harvest and burn white and red pine seedlings will be planted and monitored as release work may need to be done in the future. The 4 acre red pine plantation would undergo a marked thinning to make the stand appear more natural and allow the remaining trees to grow larger in size. The desired future condition of this stand would be an area of large mature pines surrounding Rush Lake, which is likely the forest type that occurred here before settlement.
These two red pine plantations lie just south of Lake Minnesuing in Management Area 13 of the Brule River State Forest. The management objectives for this area are to develop an older forest of northern hardwoods and hemlock for scenic values and practice passive management in areas for aesthetic and research purposes. The Brule River State Forest Master Plan and Environmental Impact Statement also states that these two red pine plantations should be thinned to a more naturally appearing density. Currently this stand is very over stocked with the basal area averaging over 220 sq. ft/acre. The proposal for these stands is to implement a selection thinning that will move the stand to a more naturally appearing density. This harvest will not take place within site of Lake Minnesuing and will be a restricted to dry or frozen ground only.
Brule River State Forest
Hemlock Regeneration: Tract 09-12 - 2 Acres
T46N R11W Sec.21
Lake Minnesuing-Scenic Management
Brule River State Forest

Hemlock Regeneration: Tract 09-12 –2 Acres
T46N R11W Sec. 21
Management Area 13: Lake Minnesuing-Scenic Management

This stand is located west of Lake Minnesuing near the corner of County Road L and Minnesuing Acres Road and lies within Management Area 13 of the Brule River State Forest. According to the BRSF Master Plan, management objectives for this area are to develop an older forest of northern hardwoods and hemlock for scenic values. Also, hemlock and white pine regeneration will be monitored, and if found to be insufficient small openings may be cut to facilitate regeneration or planting of these species.

The stand this proposed management would take place in is a 51 acre stand composed primarily of red oak with associates of red maple, white pine, ash, basswood, yellow birch, and hemlock. Multiple stand examinations have found little to no regeneration of hemlock and white pine in the stand. Currently balsam fir is the only species exhibiting any adequate regeneration. This is of concern for the stand, as the mature hardwoods begin to die out there may not be anything besides balsam fir to replace it.

The management proposal for this stand is to create small gaps around existing patches of hemlock followed by light scarification to aid in regeneration. The scarification would remove the dense leaf layer and allow hemlock seeds to germinate on bare soil where they are not as likely to dry out. Regeneration would be closely monitored in these gaps and once hemlock regeneration is established deer exclosures would be installed around the seedlings to prevent browsing. Also to aid in regeneration nurse logs will be placed in the created openings to create a favorable seedbed for hemlock regeneration in the future. These will be created from dead and dying hemlock and yellow birch that are found on the site. According to studies (Marx and Walters, 2005) these two species create adequate seedbeds for hemlock regeneration. These small gaps may also prove to be beneficial to regenerating other species such as white pine and red oak, and others that are currently uncommon on the Brule River State Forest, such as basswood and yellow birch.

This harvest would take place in the winter only and will be offset from the road, and will not be seen from either Lake Minnesuing or any private residences. The attached map shows the locations of some current patches of hemlock and examples of the sizes of small gaps that will be cut. Not all hemlock will have gaps created around them; gaps will be installed around patches of hemlock that contain larger individuals that show signs of good health and vigor. Small areas that contain multiple small patches of hemlock will also be looked at as potential areas to create gaps.
These stands lie about one mile southwest of the town of Gordon in Management Area 11, a forest production area of the Brule River State Forest. The objectives for this management area are to maintain existing forests of red pine, jack pine, and aspen as well as provide renewable forest products. The first set of stands are currently about 70 years old and composed of over mature jack pine that is beginning to decline. The proposal for these stands is to prescribe a regeneration harvest where all trees in the stands will be cut with the exception of some leave trees for seed sources and wildlife purposes, such as white pine. Following the harvest the area will be scarified to facilitate jack pine regeneration. If within a few years regeneration has failed the site will be hand planted with jack pine seedlings. The second set of stands, labeled as red and white pine are red and white pine plantations. Currently the basal area in these stands is about 190 sq. ft/ ac. These stands will be thinned to create more room for residual trees and create a more naturally appearing plantation. There will be no seasonal site restrictions.
This stand lies on the northwest edge of the Brule River State Forest north of Highway 13 in Management Area 1. The objectives for this area are to manage the upland toward a dominance of white spruce, white pine, and white birch. Currently this stand is composed primarily of white birch with pockets of tag alder and black ash interspersed. The white birch is almost 70 years old and is beginning to experience top die-back. The proposal for this stand is to regenerate the white birch and keep it as the dominant species in this stand. The stand will be scarified prior to harvest, preferably with a dozer to expose mineral soil that will serve as a seedbed for white birch. Following the scarification the mature white birch will be harvested along with any balsam fir, spruce or black ash that contain more than 2 merchantable sticks. Mowing of the tag alder will also be looked into, as this will not only regenerate the tag alder for game bird and songbird species, but also increase the favorable seedbeds for desirable species such as white birch and white spruce. Considering the lack of dominant conifer seed sources in the immediate area, this site would also be a good candidate for planting a few pockets of white pine and caging them until out of the reach of deer. This harvest will be limited to winter only and will not take place within 400' of Lake Superior, the drainage to the west of the sale will also be buffered from any harvesting.
Brule River State Forest

Stoney Hill Pine - Tract 12-12 - 46 Acres
T47N R10W Sec. 23
Management Area 7: Administrative Area-Special Management

Legend
- Red Pine
- Hardwoods
- Stoney Hill Hiking Trail
- Water
- Roads
- Woods Roads

These stands lie just south of the Brule Ranger Station in Management Area 7 of the Brule River State Forest. The forestry objectives for this management area are to maintain a pine forest community dominated by large pines. This proposal is for two different, but adjoining stands, the first is a 37 acre red pine and white pine plantation that was planted in 1916 and thinned on numerous occasions. Currently the basal area of the stand averages about 190 sq ft ac, the proposal for this stand would be to reduce the basal area to about 110 sq ft ac concentrating on removing poor quality trees and creating canopy space around residual trees to maintain this plantation. The second stand is a 8 acre oak, white birch, and aspen stand. Currently many of the mature trees are beginning to experience disback. The proposal for this stand would be to conduct a shelterwood harvest to remove over mature and poor quality trees while leaving healthy ones to serve as a future seed source to regenerate the white birch and oak covertypes. The harvest will be restricted to dry or frozen ground and impact to the Stoney Hill Hiking Trail will be minimized by limiting equipment operation to only one crossing point and not allowing any skidding or forwarding down the trail.
These stands lie north of the town of Brule off of CCC Square within Management Area 2 of the Brule River State Forest. The objectives of the management area are to develop a closed canopy northern hardwood forest with some areas dominated by conifers and also to maintain red oak by encouraging regeneration. Currently these stands are classified as northern hardwoods, with large red maple, red oak, and black ash being the dominant species. Some pockets of over mature aspen and balsam fir are mixed in. These stands are not continuous, small pockets of younger northern hardwoods interperse the mature ones. These younger stands will be left out of the harvest. Within these mature stands the average basal area is about 140 sq. ft/ ac. The proposal for these stands is to conduct a marked hardwood thinning. The thinning would concentrate on removing poor quality red maple and black ash; high quality individuals of these species will be left along with red oak and yellow birch. This will create small gaps in the canopy to allow younger trees exhibiting good health and vigor to grow up and close the canopy. The canopy around mid-tolerant species such as red oak and yellow birch will be opened a little more to create a more favorable environment to encourage regeneration. The pockets of mature aspen and balsam fir will also be harvested, removing all aspen and any balsam fir containing more than two merchantable sticks. Harvesting will be limited to dry or frozen ground only and Percival Creek will be buffered from any harvesting activity.
These stands lie north of the Town of Brule off Culhane RD in Management Area 1 of the Brule River State Forest. Management objectives for this area are to manage the upland forest toward a dominance of white spruce, white pine, and white birch with common associates of white cedar, balsam fir, and aspen. The first stand, labeled as Aspen Area, is composed primarily of over mature aspen with some mature red maple and younger balsam fir and white spruce. The proposal for this stand would be to harvest all aspen and red maple while leaving the younger conifer species. This would create a favorable environment to increase the conifer component of the stand. No harvest would be within 400’ of the Brule River. The second stand, labeled as Mixed Hardwood Area, is composed of large black ash, red maple, and aspen. Again younger balsam fir and white spruce are found throughout the stand. The proposal for this stand would be to conduct a marked thinning that would remove poor quality black ash, red maple, and mature aspen. This would open up the stand to allow more conifer species to seed in as well as allow the remaining high quality black ash and red maple to reproduce. This would create a stand with a higher conifer component as well as large, long lived hardwood species. Harvest in both areas will be limited to dry or frozen ground.
These stands lie south of Country Road B in Solon Springs Township, they are part of Management Area 10 of the Brule River State Forest. The management objectives for this area are to restore and maintain a mosaic of native natural communities that range from open pine barrens to dry pine forest. This includes increasing the acreage of jack pine and maintaining oak acreage. Although there are numerous stands in this proposal there are only two distinct covertypes. The first is 68 acres of mature jack pine that is about 60 years old. These stands will be clearcut and regenerated, concentrating on natural methods such as anchor chaining first. The second set of stands is 97 acres of mature scrub oak that are about 80 years old. These stands will also be clearcut and allowed to regenerate back to oak and aspen. Portions of the stand contain mature balsam fir and red pine. The red pine will be left as a seed source while the balsam fir that contains more than two merchantable sticks will be harvested. These proposals will meet management goals by maintaining the pine barrens covertypes. There will be no seasonal restrictions on this harvest. Care will be taken to not impact the North Country Trail and snowmobile trail.
This stand lies on the northern edge of the Brule River State Forest north of Highway 13 in Management Area 1. The objectives for this area are to manage the upland toward a dominance of white spruce, white pine, and white birch. Currently this stand is composed primarily of white birch with secondary components of aspen and balsam fir. The white birch is almost 70 years old and is beginning to experience top die-back. The proposal for this stand is to regenerate the white birch and keep it as the dominant species in this stand. The stand will be scarified prior to harvest, preferably with a dozer to expose mineral soil that will serve as a seedbed for white birch. Following the scarification the mature white birch will be harvested along with any balsam fir, spruce or black ash that contain more than 2 merchantable stems. Pockets of mature conifer species will also be marked as leave trees to provide a mature seed source for future stands. This harvest will be limited to winter only and will not take place within 400' of Lake Superior, the drainage in the middle of the sale will also be buffered from any harvesting activity. An access road will need to be created, drainages are small in size and easily crossed using timber mats.
These stands lie south of the town of Brule off of Hilltop Road in Management Area 12 of the Brule River State Forest. Management objectives for this area are to restore and maintain a mixed hardwood and pine forest, reducing aspen acres, and increasing northern hardwood acres. This proposal is made up of three distinct stands. The first is a 9 acre jack pine stand that is currently about 60 years old. This stand will be clearcut and anchor chained to maintain the jack pine covertype. The second stand is 33 acres of large mixed pine and 60 year old aspen. In this stand all of the aspen and jack pine will be harvested while the red pine and white pine will be retained. In some areas of this stand there are small dense pockets of pine with basal areas over 250 square feet/acre, these pockets will be thinned to release some of the large trees and open up the understory for regeneration. Some type of site disturbance, such as anchor chaining will be looked into as a possible way to promote red and white pine regeneration. The third stand is an 8 acre, 120 year old white pine stand that will be lightly thinned to provide more growing space for the residual trees. Harvest will be limited to dry or frozen ground only. Access will be off of the corner of Francis Willard and Hilltop Road, access may also be gained through Cedar Island Conservancy if allowed.
This aspen stand lies east of Clevedon Road in Management Area 3 of the Brule River State Forest. Objectives for this area are to maintain aspen as the dominant forest cover type and increase the diversity of conifers as secondary cover types. This stand is about 65 years old and currently composed of mature aspen with an understory of balsam fir. The proposal for this stand is to harvest all merchantable aspen and all balsam fir with two or more 100" sticks in them. The aspen will regenerate by root suckers and the created openings from the harvest will promote balsam fir and white spruce growth and regeneration. Following the harvest, areas used for landings will be planted with conifers such as white pine and white spruce to meet management area objectives and also to eventually serve as a seed source in the future. Site is suitable for biomass harvesting. Harvest will be limited to dry or frozen ground only.