# Savage River State Forest

# Annual Work Plan


## Fiscal Year 2013

Prepared: Wade R Dorsey (Forest Manager) — 8/29/2012 (Date)

Reviewed: Robert Neely (Regional Forester) — 8-30-2012 (Date)

Reviewed: ~~(Public Lands Policy & Planning)~~ (Land Acquisition & Planning) — 9/11/12 (Date)

Approved: (Environmental Specialist) — 9.11.12 (Date)

# Savage River State Forest Annual Work Plan

## A. Forest Overview

Savage River State Forest is approximately 54,324 acres in size and is situated in the northeastern quadrant of Garrett County of Western Maryland. It is a second growth mixed hardwood forest dominated by oak species, sugar and red maple, black cherry, hickory and ash. Owing to high rainfall and certain topographic features, Savage River State Forest contains many excellent quality growing sites stocked with superior quality trees. The forest contains approximately 4000 acres of conifer plantations, established in the 1940's following state acquisition. Red pine is the dominant tree species within these plantations but other conifers include white pine, Norway spruce, larch, and Scotch pine. These plantations were established as nurse crops to rehabilitate abandoned and depleted farm fields, with the long-term goal of conversion back to native hardwoods as appropriate.

Savage River State Forest has been intensively managed for over 60 years. Forest harvest and grooming operations are undertaken to thin overstocked stands, to effectively deal with public safety concerns, to harvest mature or diseased/dying trees, to improve habitat for certain wildlife species, to assist and provide for certain research needs, to address aesthetic concerns, and to increase the proportion of age/height diversity of forested stands.

## B. Annual Work Plan Summary

The FY-2013 Annual Work Plan for Savage River State Forest was formulated during 2011. It contains projects to be undertaken in the areas of Silviculture, Maintenance, Special Projects, and Recreation.

Savage River will harvest approximately 0.488 million board feet of sawtimber through implementation of the FY-13 Annual Work Plan. The plan involves fifteen proposed silvicultural projects within the forest. The harvest areas range 1 to 61 acres. One of these harvest areas is a spruce/hardwood thinning the other areas are hardwood projects.

| Silvicultural treatment | Acres | Live ST Bd. Ft. | Dead ST Bd. Ft. | Total ST Bd. Ft. | Pulp Cords |
|---|---|---|---|---|---|
| Wildlife Treatments | 6 | 21,638 | | 21,638 | 92 |
| Conifer Thinning | 29.9 | 90,000 | 6,000 | 96,000 | 182 |
| Hardwood Thinning | 37 | 375,739 | 638 | 376,377 | 2498 |
| Pre-commercial Thinning | 28 | | | | |

There are other salvage operations that are being worked up that are not ready at this time.

Most of the maintenance projects are of a routine nature. Again most of recreation work is of a routine nature; however we will have a new recreation plan for the forest to implement which includes starting the Margroff wildlife management area. A special effort that began in FY 11 and will be ongoing for the next 4 years is stand level data collection as part of our certification and management efforts and we will be addressing items in need of improvement as identified in the 2011 FSC/SFI Certification Audits. Further we will be monitoring all of our silvicultural activities five and 10 years post treatment. New watershed improvement effort lead by the Bureau of Mines will likely be finished in FY 2013. The ecosystem restoration work with the Inland Fisheries Service to improve the habitat for native brook trout will be continued in FY 2013.

## C. Maintenance Projects

Routine maintenance projects include: Building repair and maintenance, mowing at the campus, snow removal, repair and replacement of fire rings and tables at the camp sites, brush hogging trails, and repair of road surfaces.

There are 70 plus primitive camp sites that we maintain.

There are about 101 miles of trail and hardened road surface on the forest and we are maintaining 1/3 of these each year.

There is a public shooting range on the forest that we keep open year round.

Eighty miles of boundary will be repainted and 5 miles of "lost" boundary will be recovered.

## D. Recreation Projects

We will begin implementing the expanded recreation plan that was created in FY 2012.

The Wildlife and Heritage Service will be working on 2 acres of herbaceous openings, 25 bluebird boxes, and pruning 75 fruit trees. They will also be controlling woody vegetation by mowing and prescribed burning on 40 acres of wildlife openings.

Initial work on the Margroff wildlife habitat unit will begin by creating a soft edge along one of the gas well areas. Another wildlife effort will be to regenerate aspen along Fairview Road. For more information on these efforts see the silvicultural prescription section.

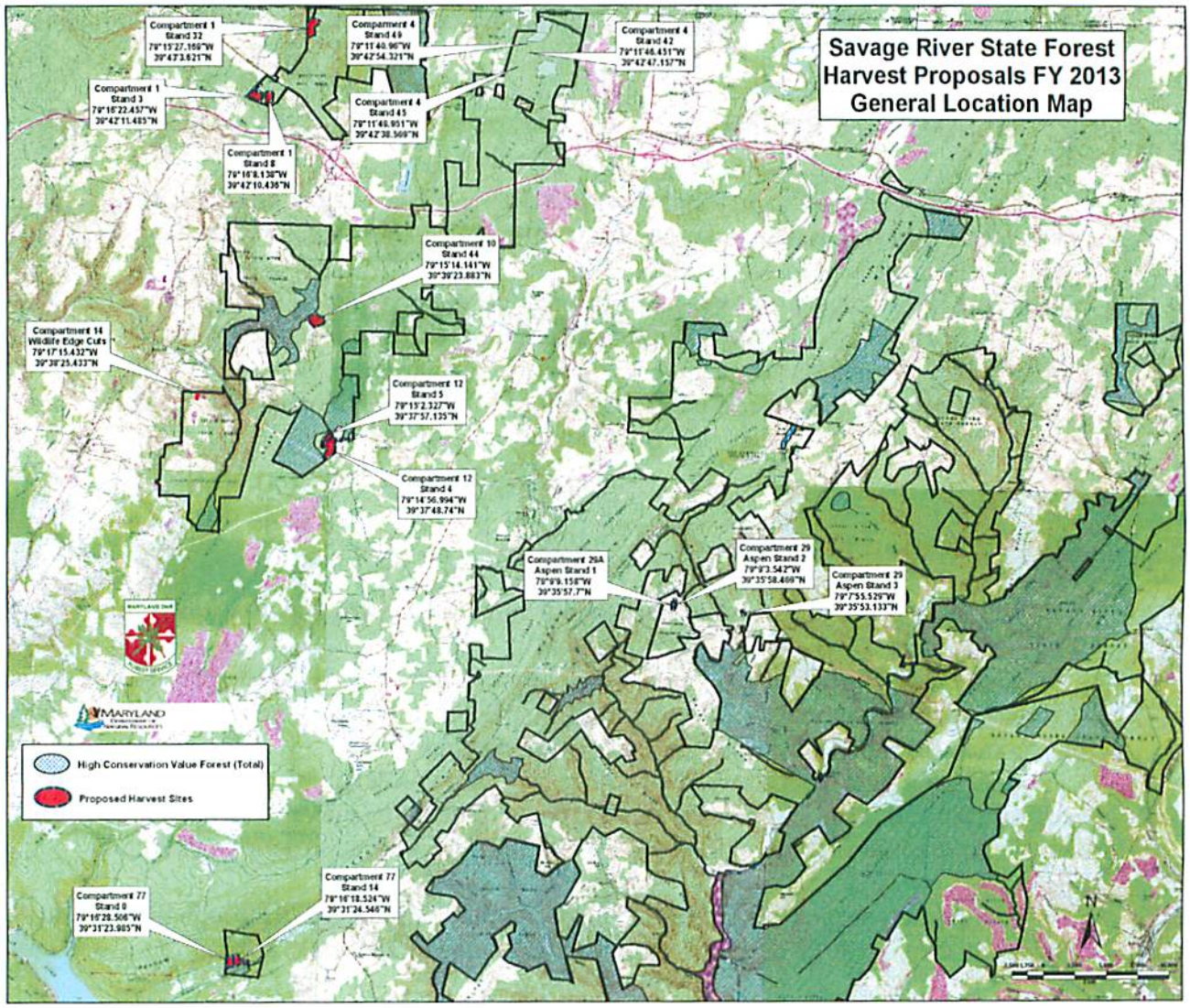
The portion of the Continental Divide Loop bike trail that goes through the forest will likely be finished in FY 2012, but if not it will be finished in FY 2013.

## E. Special Projects

In fiscal year 2013 stand level data collection will be a big part of this years work.

## F. Silvicultural Projects

A number of the following projects have an oak regeneration problem that is caused in part by excessive deer browsing which may require fencing the project area. The wildlife service will help determine which projects are good candidates for fencing.



**Silviculture Project – Aspen Regeneration (Compartment 29)**

Description

This 5 acre project proposal is located upslope and south of Poplar Lick Run divided into 3 separate tracts. Tracts 1 and 2 are located on Fairview Road approximately 1.5 miles from New Germany Road. Tract 3 is about 3 miles from New Germany Road off the north side of Fairview Road on an old logging trail. The trees are a mixed hardwood type with abundant aspen especially on the side nearest the roads. Each tract is near conifer plantations.

On average these three tracts have approximately 1,264 live trees per acre with 160.9 sq. ft. of basal area per acre. This means that the stands are over-stocked. Fifty percent of the growing stock is of acceptable quality. The site is dominated by red maple, big toothed aspen, and black cherry. Other species present include: sweet birch, black cherry, northern red oak, black oak, white pine, cucumber tree, Norway spruce, white ash, and scarlet oak. The sparse advanced regeneration noted consists of black cherry, oak and cucumber tree. There are some ferns and grasses present. There is also a fair amount of interfering plants such as striped maple, witch hazel and mountain laurel. The non-native invasive plants include Japanese spirea, Japanese barberry, Japanese stiltgrass and bush honeysuckle.

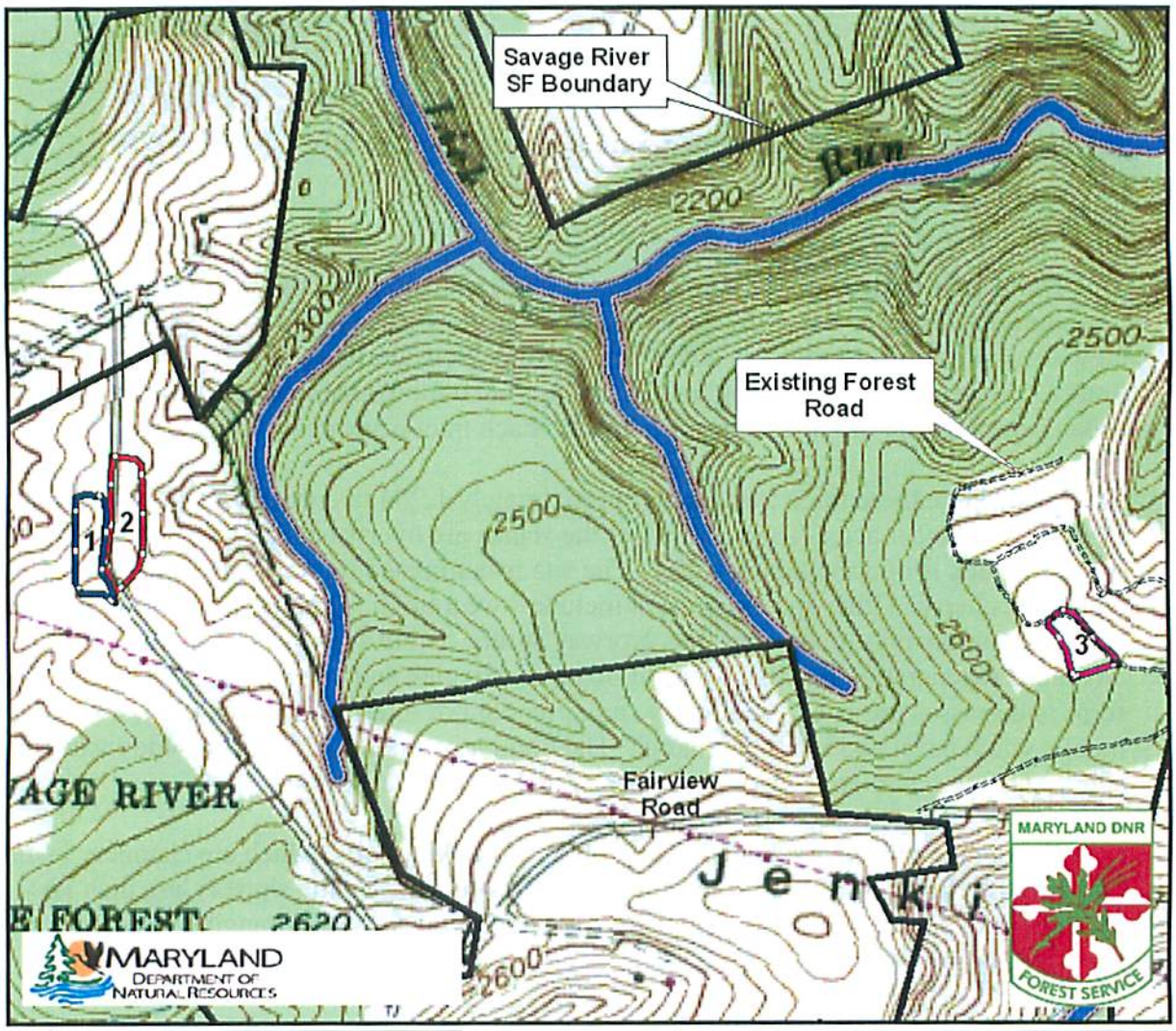
The dominant soils are the Ungers, Calvin and Lehew soils, which are channery loams that are well drained and have few equipment limitations when the slope is less than 10 percent. The productivity of the site is fair-good with the site index ranging from 65 – 75 feet for mixed oak.

Management and Silvicultural Recommendation

The goal for this project is to improve the habitat for ruffed grouse and woodcock by stimulating the regeneration of aspen. A secondary benefit would be to improve the habitat for goshawk as they feed on ruffed grouse. Goshawks are known to have nested in the area.

Within each tract all trees above 2" dbh should be felled. From the road edge the cutting will extend 66 feet beyond the last aspen tree. Acceptable quality oaks and hickories should be retained in the stand. This project should be done during the dormant season to favor the sprout development. Before the tracts are logged the invasive plant species on the tracts should be controlled (species like Japanese stilt grass and Japanese spirea).

Approximately 15 – 20 years from now ½ of each area should be harvested again to stimulate aspen root sprouting. Then in 5 – 10 years the second ½ of each area should be harvested. This procedure will be repeated until it is no longer necessary for ruffed grouse or woodcock habitat.




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartments 29 and 29A**
**Aspen Stands 1-3**
**Approximatley 6.5 Acres Total**

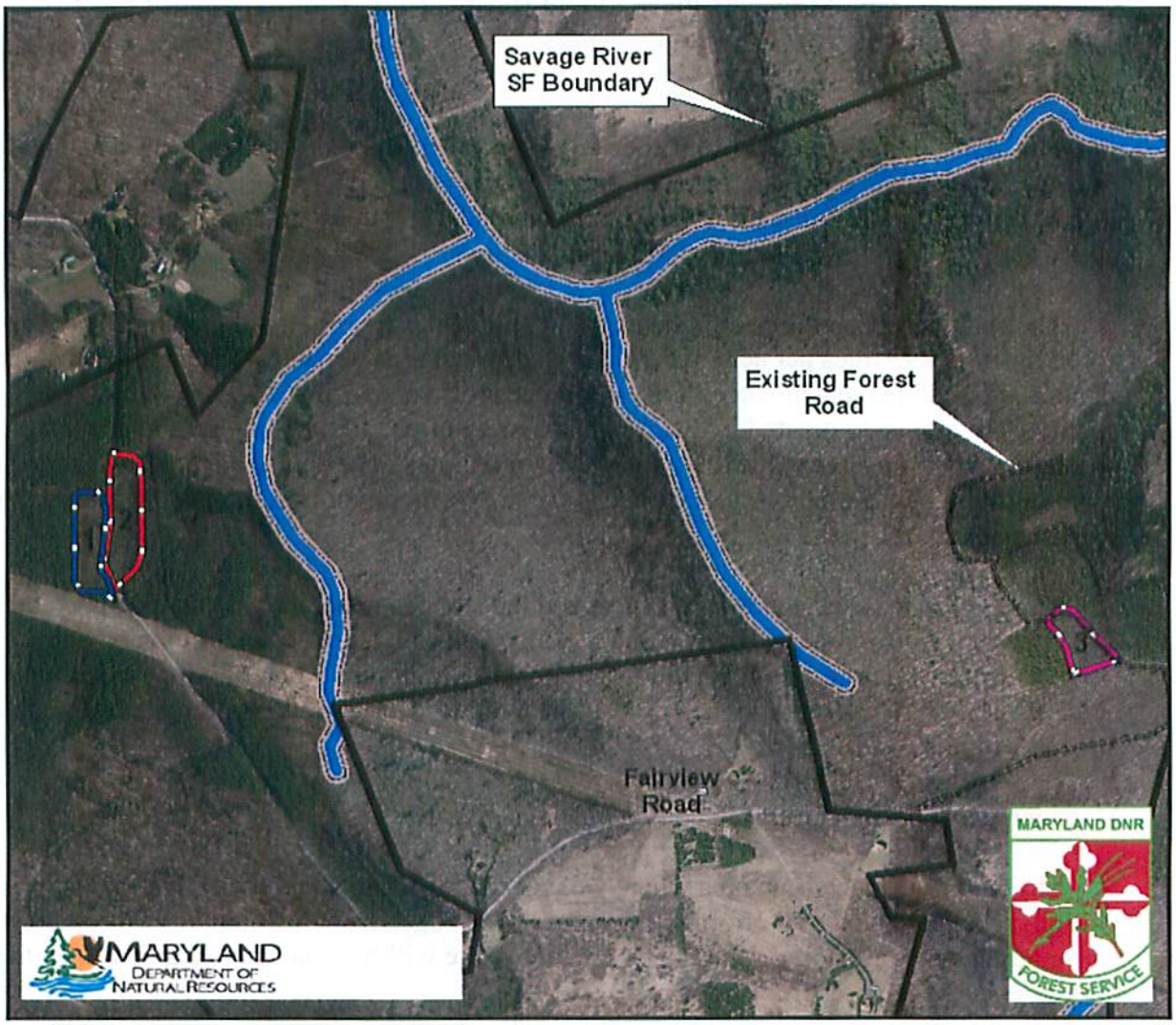
N

1:792

400 200 0 400 800 1,200 1,600

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Areas




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartments 29 and 29A**
**Aspen Stands 1-3**
**Approximatley 6.5 Acres Total**

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400 200 0 400 800 1,200 1,600

Feet

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- Harvest Areas

**Silviculture project – Margroff Place - Field Border Cuts (Compartment 13 & 14)**

Description

This 0.6 acre project proposal is located on the north slope of Margroff Place and upslope from Bear Creek and upstream from the Bear Creek Fish Hatchery. It is approximately 1 mile south of Bowman Hill Road off a Forest Service road. The trees are an Allegheny hardwood type which implies the productivity of the soils is good.

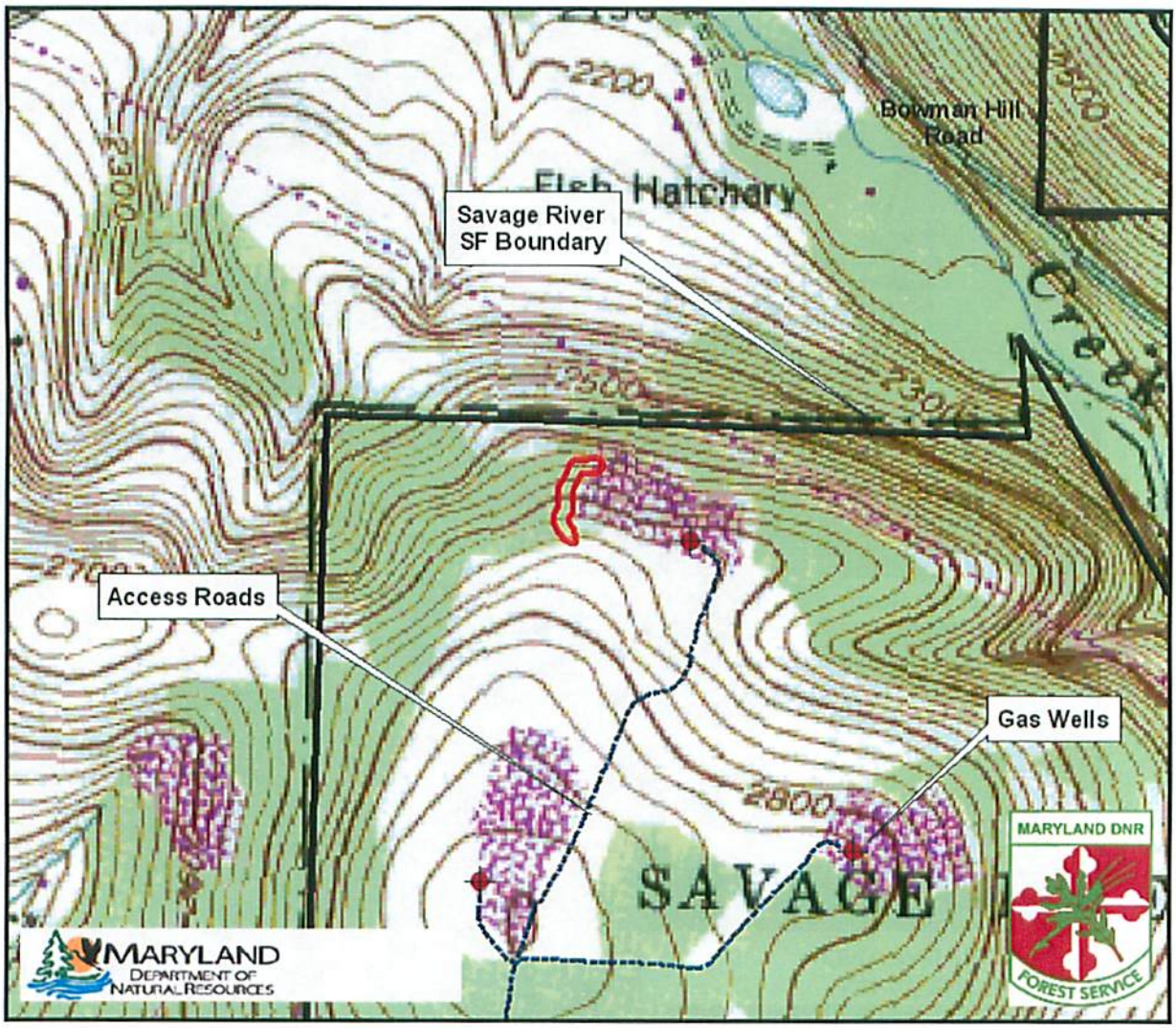
The stand has been thinned in the past and part of the area is an old landing. There are approximately 295 trees per acre with 90 sq. ft. of basal area per acre. This implies that the stand is about 85 percent stocked. Fifty-six percent of the growing stock is of acceptable quality. The site is dominated by black cherry, sweet birch, and red maple. Other species present include: pin cherry, hickory, and northern red oak. The sparse advanced regeneration consists of red oak and black cherry. The understory vegetation is dominated black berry and striped maple.

This project area has a northern aspect and the slope is generally less than 20 percent. The dominant soils on the hillside are the Dekalb soils which are channery to very stony loams that are well drained and have few equipment limitations when the slope is less than 20 percent. The productivity of the site is average to good with a site index ranging from 65 to 80 feet for upland oaks.

Management and Silvicultural Recommendations

The Margroff place is an area where we will focus management for early successional wildlife species. The initial effort is to create a "soft-edge" from the hardwood forests that surround the gas well storage sites. The first soft-edge will be adjacent to a gas well on the northern side of the property (see map).

The long-term goal of this effort is to create between ½ - 1 acre soft-edges in every age class (1-20 years old), adjacent to the seven gas well sites. These soft-edges will typically be ½ - 1 acre in size. They are going to be 66' in from the edge of the gas well field and the entire length of 1 side of the gas well opening. Adjacent sides will be cut every 5 years. In between time other well sites will have the same process done on them. The cutting will be repeated every 20 years. Invasive plants should be controlled prior to any cutting. There is at least one large dead tree that should be left standing unless it creates a safety issue.



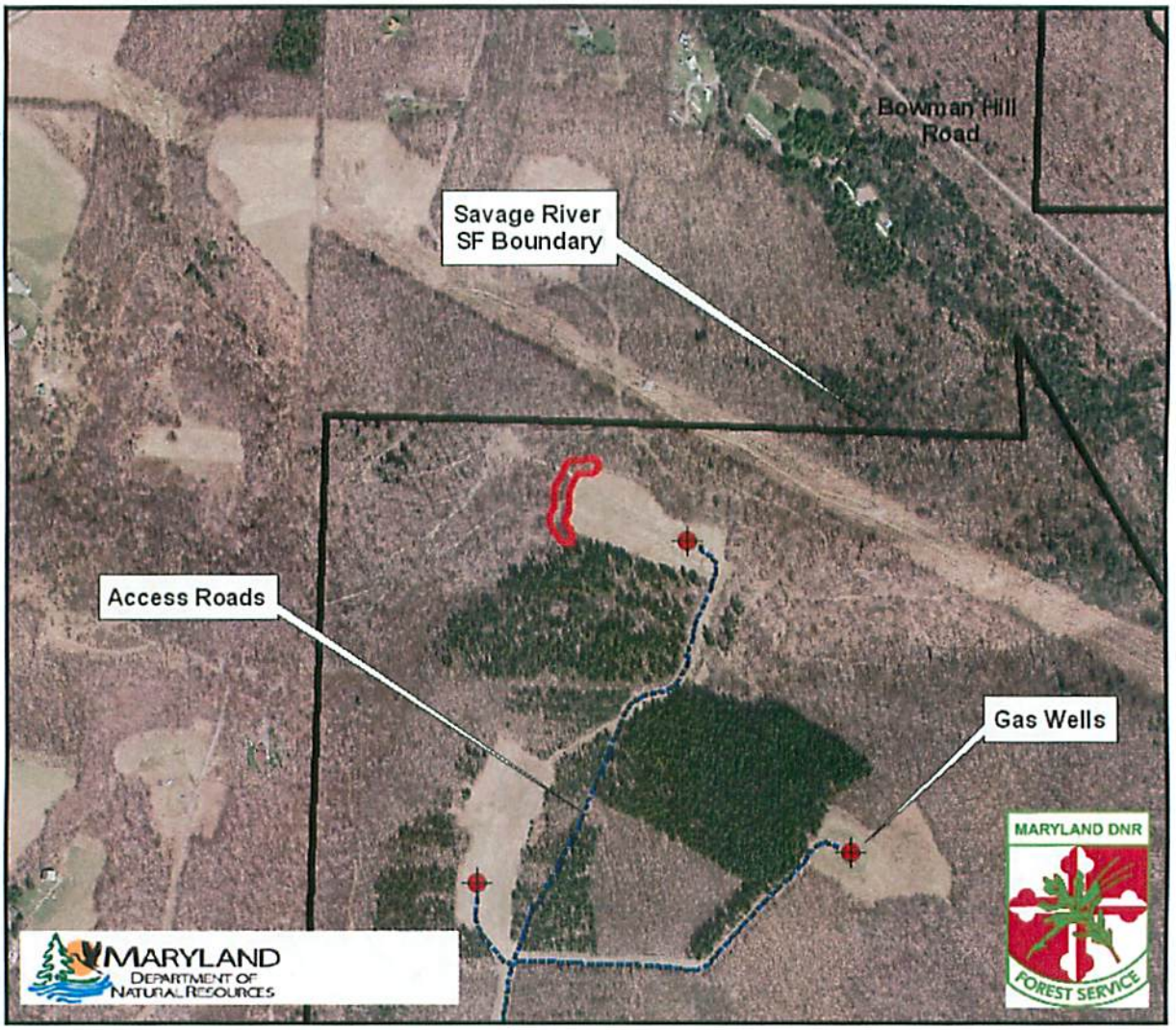

**Savage River State Forest**
**Harvest Proposals FY 2013**
**Compartment 14 Edge Cuts**

N

1:660

360 180 0 360 720 1,080 1,440
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area




**Savage River State Forest**
**Harvest Proposals FY 2013**
**Compartment 14 Edge Cuts**

N

1:660

360 180 0 360 720 1,080 1,440
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area

**Silviculture project – Bowman Hill Conifer Thinning (Compartment 12, Stand 4)**

Description

This 30 acre project proposal is located on the south side of Bowman Hill Road. Its northern boundary Bowman Hill Road and its eastern boundary is the edge of the compartment. The stand is a red pine plantation with a number of hardwood volunteers and in the residual openings mixed hardwoods.

About 8 % of the trees in this stand are dead. There are approximately 478 live trees per acre and with 143.9 sq. ft. basal area per acre. This means that the stocking level is about 85 percent. The site is dominated by red pine, red maple, black cherry, and Norway spruce. Other species present include: northern red oak, yellow poplar, eastern hemlock, white oak, sweet birch, American beech, scarlet oak and white ash. The sparse advanced regeneration consists of black cherry, yellow poplar, red oak, white oak and sweet birch. The understory vegetation includes: woods fern, New York fern, hayscented fern, bracken fern, Japanese barberry, dogbane, smilax, and club moss. In places witch hazel and striped maple are very abundant and over 6 feet tall.

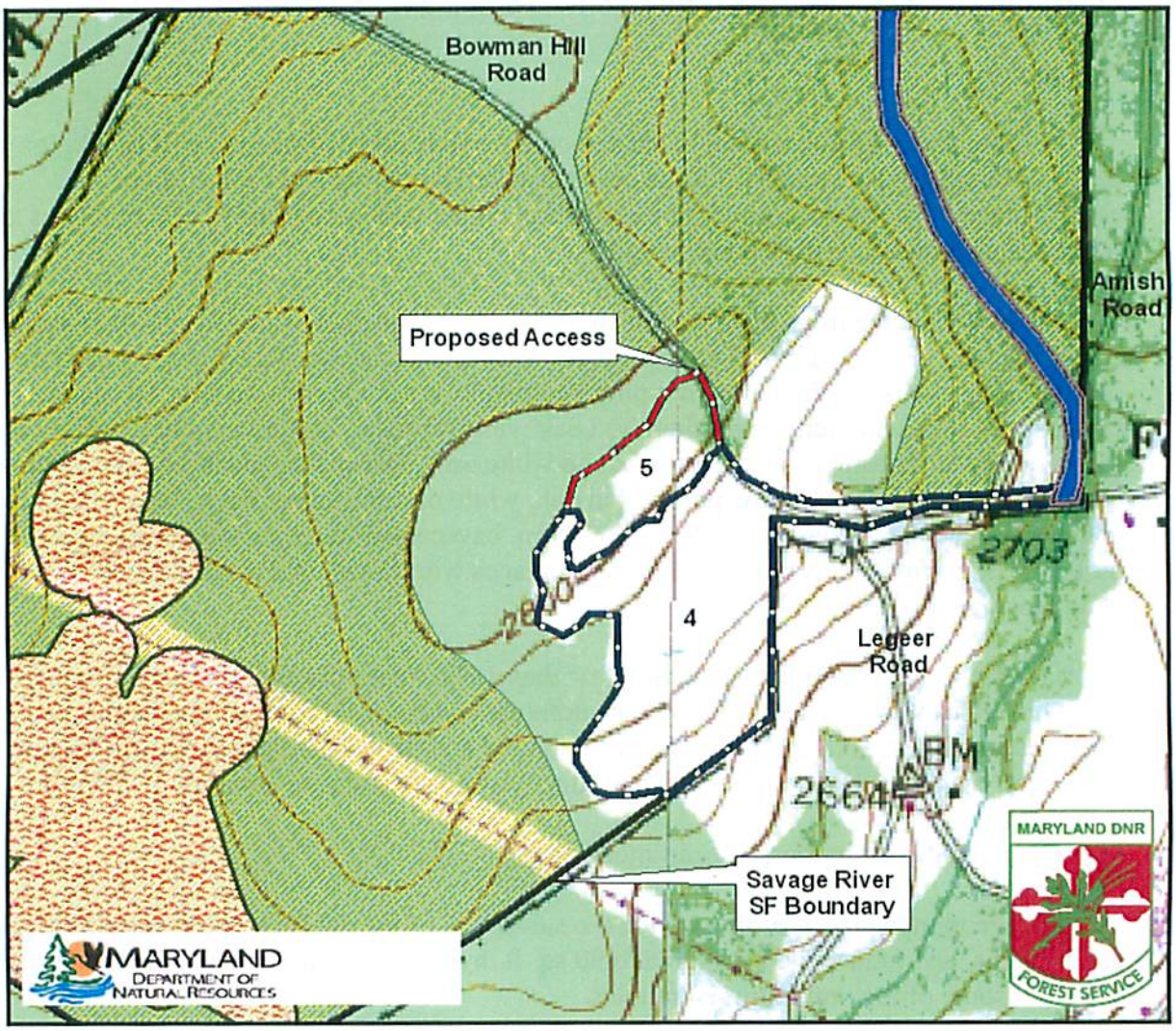
The site is gently sloping (generally less than 15%), faces the east, and drains into the north branch of the Casselman River. The dominant soils are the Dekalb and Gilpin very stony loams. These soils are generally well drained and there are some equipment limitations associated with the steeper slopes. The productivity of the soils are good (65 - 75 feet).

Management and Silvicultural Recommendations

The recommendation for this stand is to salvage ½ of the dead trees, remove all the poor quality trees, and reduce the basal area to 90 sq. ft. by removing all the rest of the pole size trees and some of the immature red maples.

Ideally before the cutting recommendation is carried out the competing vegetation and invasive plants needs to be controlled. Due to the large size and density of the striped maple and witch hazel backpack spraying is not practical. Conducting a prescribed burn to top kill the competing stems then when the stems sprout up in the spring to herbicide them with a backpack sprayer.

Ideal thinning time is during the late fall and winter to reduce the risk of annous root rot. All the red pine logs should be removed to reduce the risk of an ips beetle outbreak.



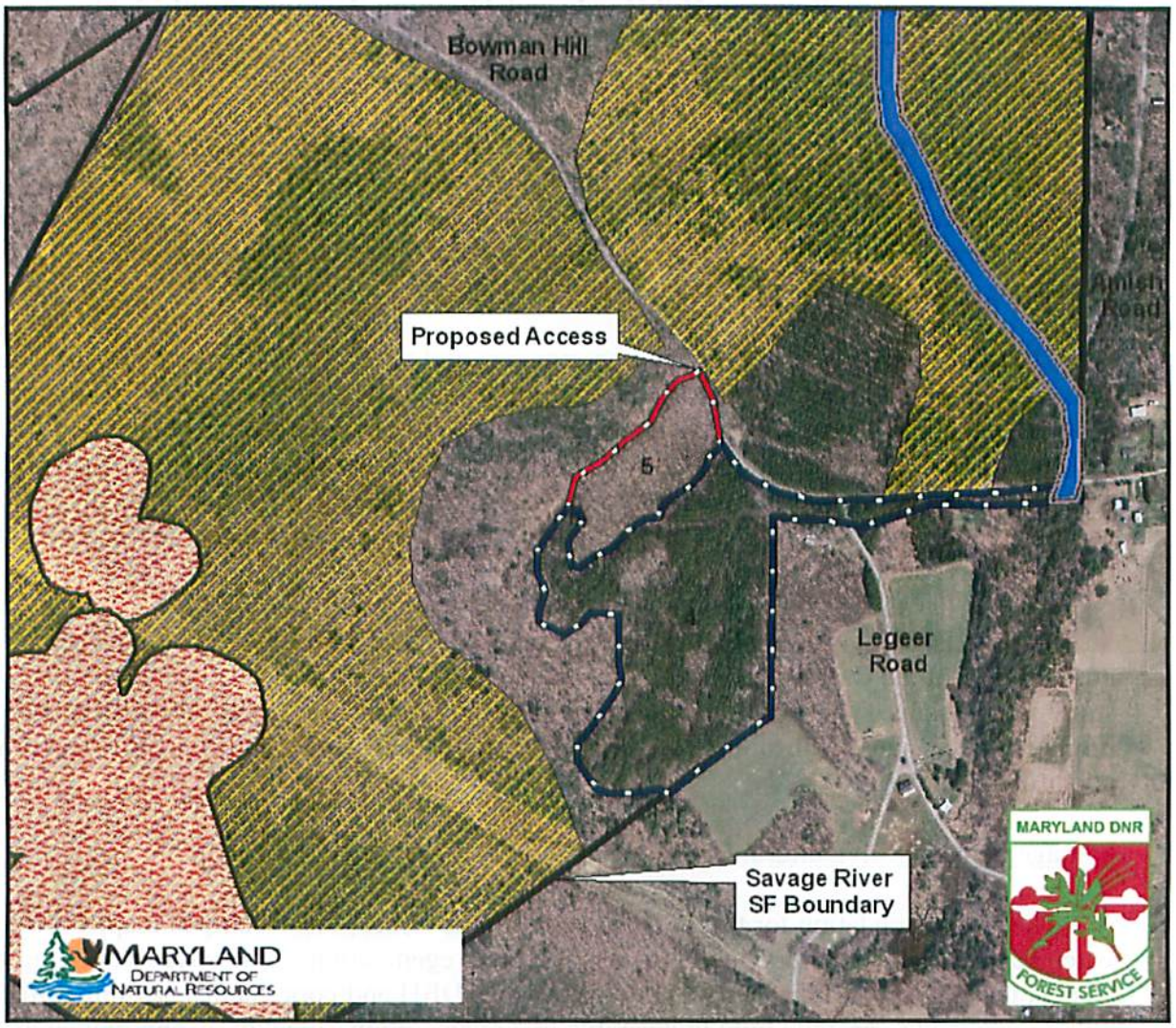

**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 12**
**Stand 4 Approximately 30 Acres**
**Stand 5 Approximately 7 Acres**

N

1:660

340 170 0 340 680 1,020 1,360
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Areas




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 12**
**Stand 4 Approximately 30 Acres**
**Stand 5 Approximately 7 Acres**

N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
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- Streams and 50' Buffers
- Harvest Areas

**Silviculture project – Bowman Hill Hardwood Thinning (Compartment 12, Stand 5)**

Description

This 6 acre project proposal is located on the south side of Bowman Hill Road. Its northern boundary Bowman Hill Road and its eastern boundary is the edge of the stand 4 and the western boundary is a logging road. The trees present are the Alleghany hardwood type. There are few desirable seedlings present at this time perhaps due to the abundance of competing plants or white tailed deer.

There are approximately 780 live trees per acre and with 123 sq. ft. basal area per acre. This means that the stand is overstocked. The site is dominated by black cherry, red maple, northern red oak and shagbark hickory. Other species present include: white oak, scarlet oak, and sugar maple. Advanced regeneration consists of black cherry, red maple, northern red oak and American chestnut. Understory vegetation includes: striped maple, wild lily-of-the-valley, greenbriar, New York fern, hayscented fern, cinnamon fern, bracken fern, grass, witch hazel, dewberry and blueberry.

The site is gently sloping (generally less than 15%), faces the east, and drains into the north branch of the Casselman River. The major soil series are the Dekalb and Leetonia very stony sandy loams. These soils are generally well drained and there is some equipment limitations associated with slope steepness. The productivity of the soils ranges from fair to good (60 - 70 feet).

Management and Silvicultural Recommendations

The recommendation for this area is to control the ferns, grasses, striped maples and witch hazel which are competing with desirable tree regeneration. Afterwards a thinning will be conducted, where all the trees from 6 – 11 inches DBH and poor quality sawtimber trees will be removed to provide light to desirable tree regeneration. In addition approximately ½ of the dead trees should be salvaged.

Controlling the understory competition is a necessary prerequisite to successfully establishing the next forest. The understory can be controlled by herbicide application and/or prescribed fire. The herbicide work should be done first; this will kill the competing vegetation and reduce the rapid re-colonization of the site by these plants. Prescribed fire can be used instead of herbicides or in conjunction with herbicides. Prescribed fire will top kill the understory competition including small undesirable trees. Prescribed fire is fairly inexpensive, but gives a fairly short window for desirable seedlings to get established. The herbicide work is fairly expensive, but gives a longer window for desirable seedlings to get established.

The thinning operation that follows the understory control work is designed to provide sufficient light to stimulate the germination and growth of young oak and black cherry seedlings. The target residual basal area is 83 sq.ft. Within 10 years the desirable seedlings should be 3 – 4 feet tall. At which point, a shelterwood sequence could begin or if the

seedlings are tall and thrifty enough an overstory removal/regeneration cut could be conducted.

**Silviculture project – Stand 32 Thinning (Compartment 1)**

Description

This 20.9 acre project is located approximately 2.5 miles northwest of Keyers Ridge. The western boundary is the edge of compartment 1 and the eastern boundary is shared with stand 38. The stand is a northern hardwood type. There is very little desirable regeneration in this stand possibly due to deer browsing. This stand was thinned in 1990.

There are 615 trees per acre on this site and the basal area is 119 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are American beech, yellow poplar, northern red oak and sugar maple. Other trees present include: black cherry, sweet birch, red maple, basswood, white ash, white oak, eastern hemlock, shagbark hickory, pignut hickory, and chestnut oak. The sparse advanced regeneration consists of oak, black cherry and yellow poplar. The understory vegetation includes of ferns, witch hazel, multiflora rose and striped maple.

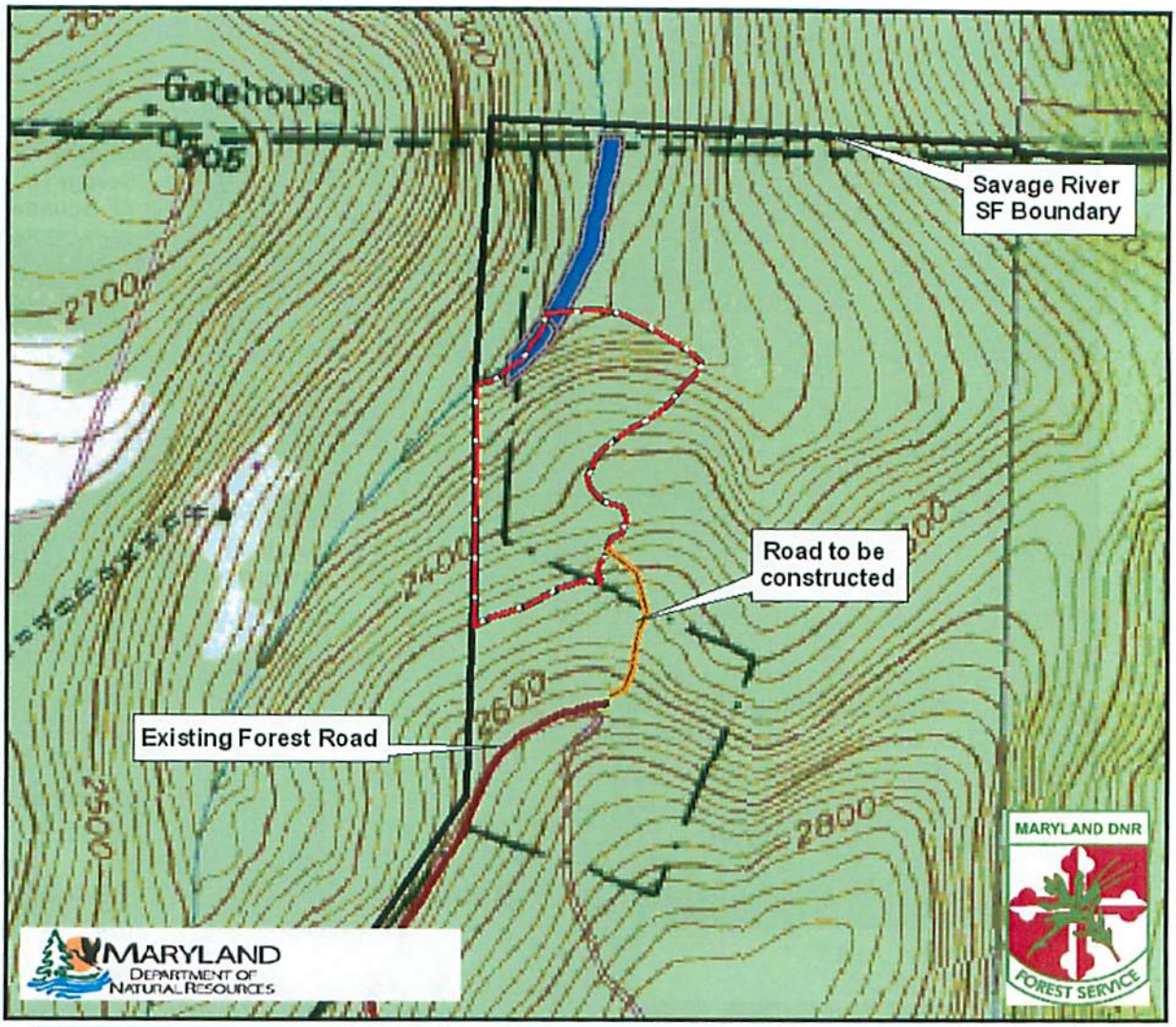
The site is on a northwestern aspect and the slope ranges from 15 to 35 percent. The dominant soil is SrF stony land, steep. This soil is well drained and equipment limitations are slight when the slope is less than 15 percent. The productivity of the site is very good with the site index ranging from 75 - 85 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this project is a thinning to increase the light on the forest floor stimulating advanced regeneration and at the same time improving the growth of the residual trees thereby increasing the value of the stand.

The preliminary inventory suggests that the stand may have a fern and tall woody interference problems. The location of the stand does not permit the use of prescribed fire, so the use of herbicide on the ferns, and hack and squirt application on the tall woody interference is necessary to control the regeneration competition. Multiflora rose and other exotic invasives can be controlled at the same time. After the competing vegetation is controlled then the stand can be thinned to 80 sq. ft. This can be done by removing all the pole sized trees, all the poor quality sawtimber sized trees and approximately 7 sq. ft. of good quality sawtimber size trees. All the dead trees pole size and larger should be left in the stand.

After 5 years the stand should be examined for acceptable levels of advanced regeneration. If acceptable levels of advanced regeneration are present then plans for a regeneration harvest should be made and if not present the cause should be determined and corrective action taken.




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 1 Stand 32**
**Approximately 14 Acres**

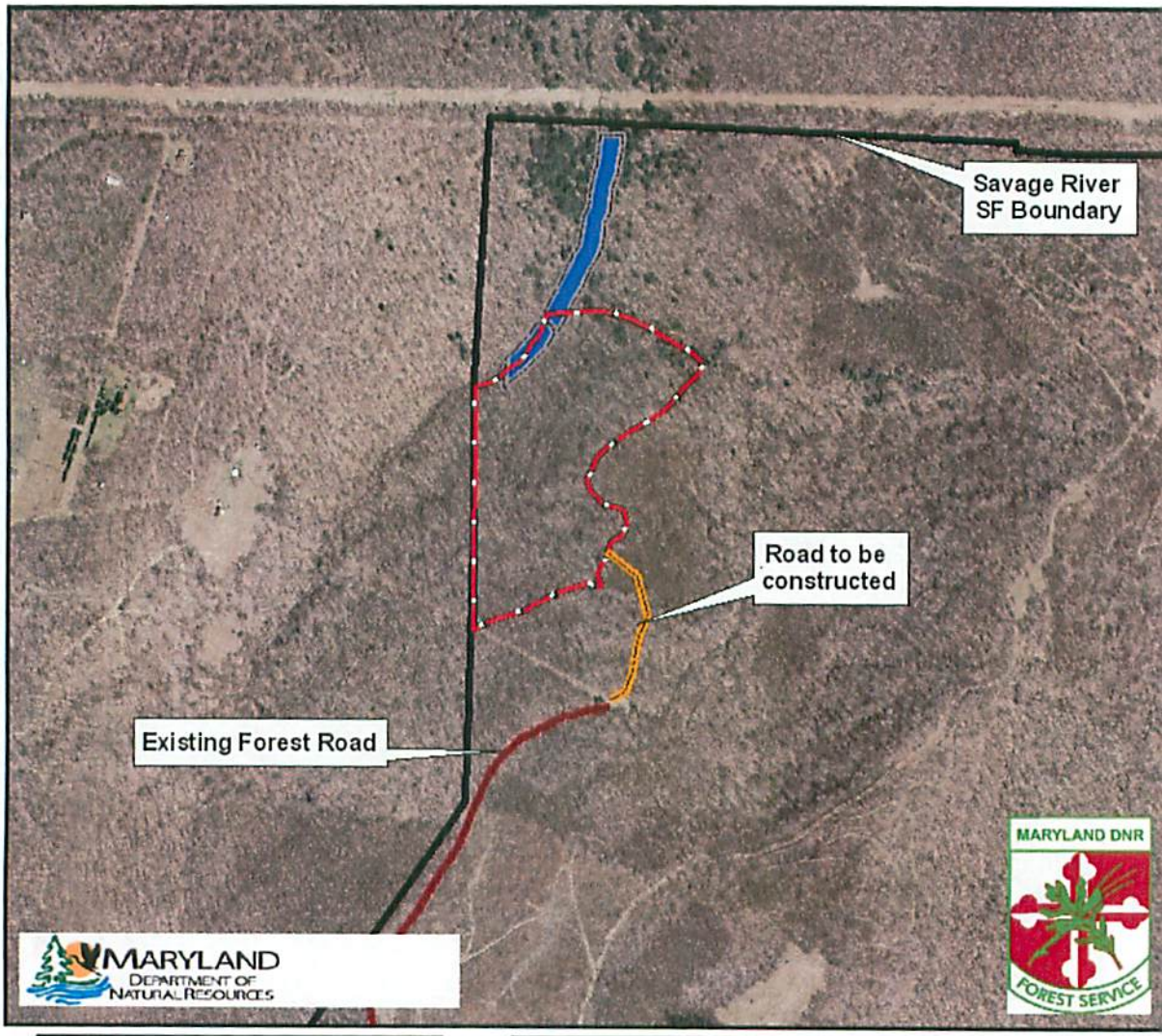
N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 1 Stand 32**
**Approximately 14 Acres**

N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
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**Silviculture project – Stand 3 Pre-commercial (Compartment 1)**

Description

This 17 acre project proposal is located downslope and south of Route 40. It is approximately 1 ½ miles west of Keyers Ridge. The trees represent a mixed oak type. There are few desirable seedlings present. The area was thinned in 1983.

There are 875 trees per acre on this site and the basal area is 116 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are black cherry, sweet birch, and pin cherry. There are 48 red oak trees per acre in the sapling and small poletimber size class. Other trees present include: red maple, black locust and northern red oak. The sparse advanced regeneration consists of black cherry, oak and red maple. The understory vegetation includes fern, grapevine, striped maple and witch hazel.

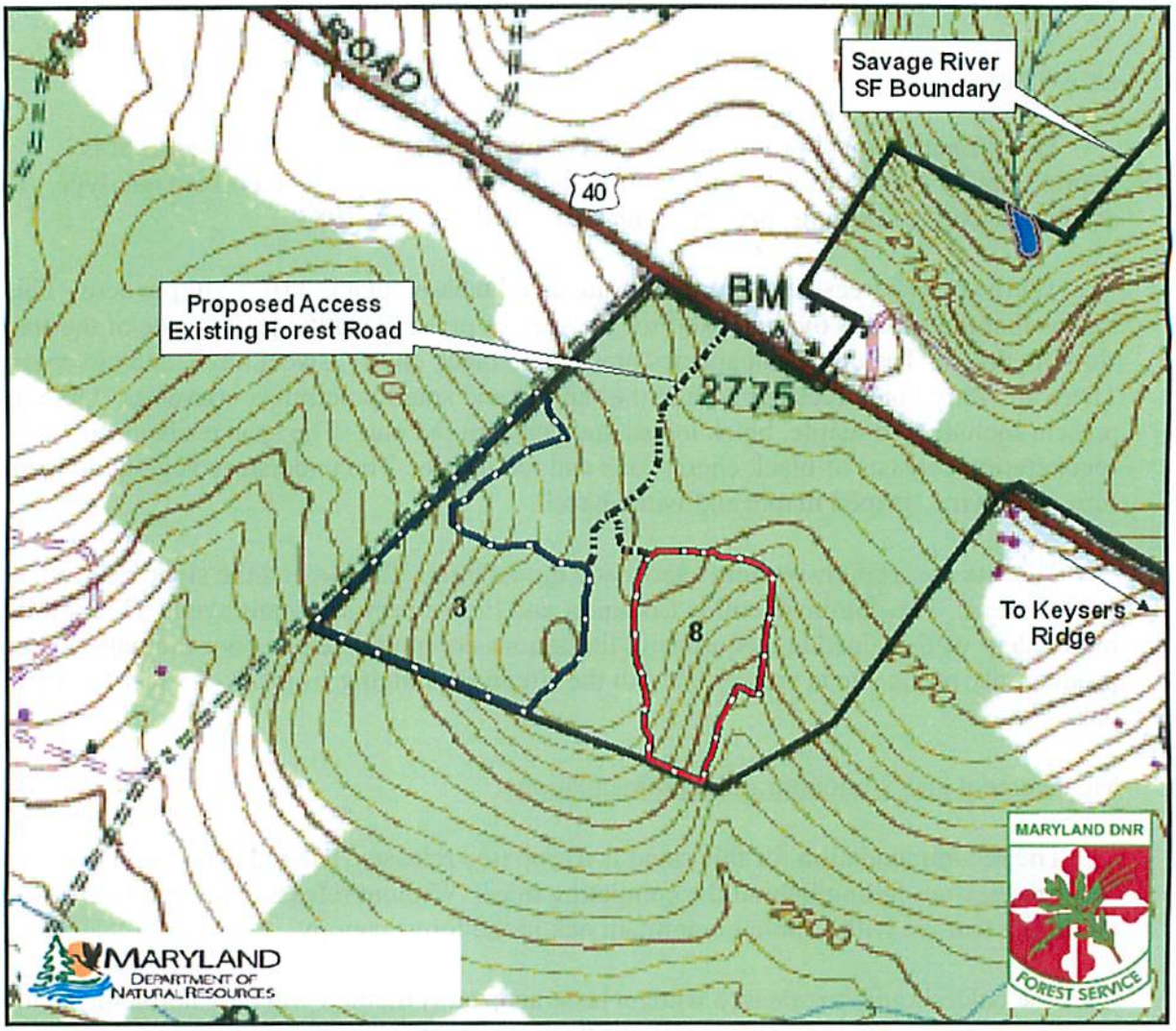
The site has a south-western aspect and drains into Mill Run and the slope ranges from 8 – 25 percent. The dominant soil is Cookport and Ernest very stony silt loam. This soil is moderately well drained and equipment limitations are moderate due poor drainage. The productivity of the site is very good with the site index ranging from 75 - 85 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a crop tree release. The red oaks should be released because they are falling behind the competing trees. Without releasing the red oaks now it is not likely that we will be able to maintain oak in the forest canopy.

The oaks should be released using a hack and squirt method whereby herbicide is injected into the competing stems. This release will encourage the oaks to make rapid growth.

Then 5 years after the completion of this project the stand should be examined again to determine if the process needs to be repeated.




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 1**
**Stand 3 Approximately 17 Acres**
**Stand 8 Approximately 11 Acres**

N

1:660

340 170 0 340 680 1,020 1,360
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
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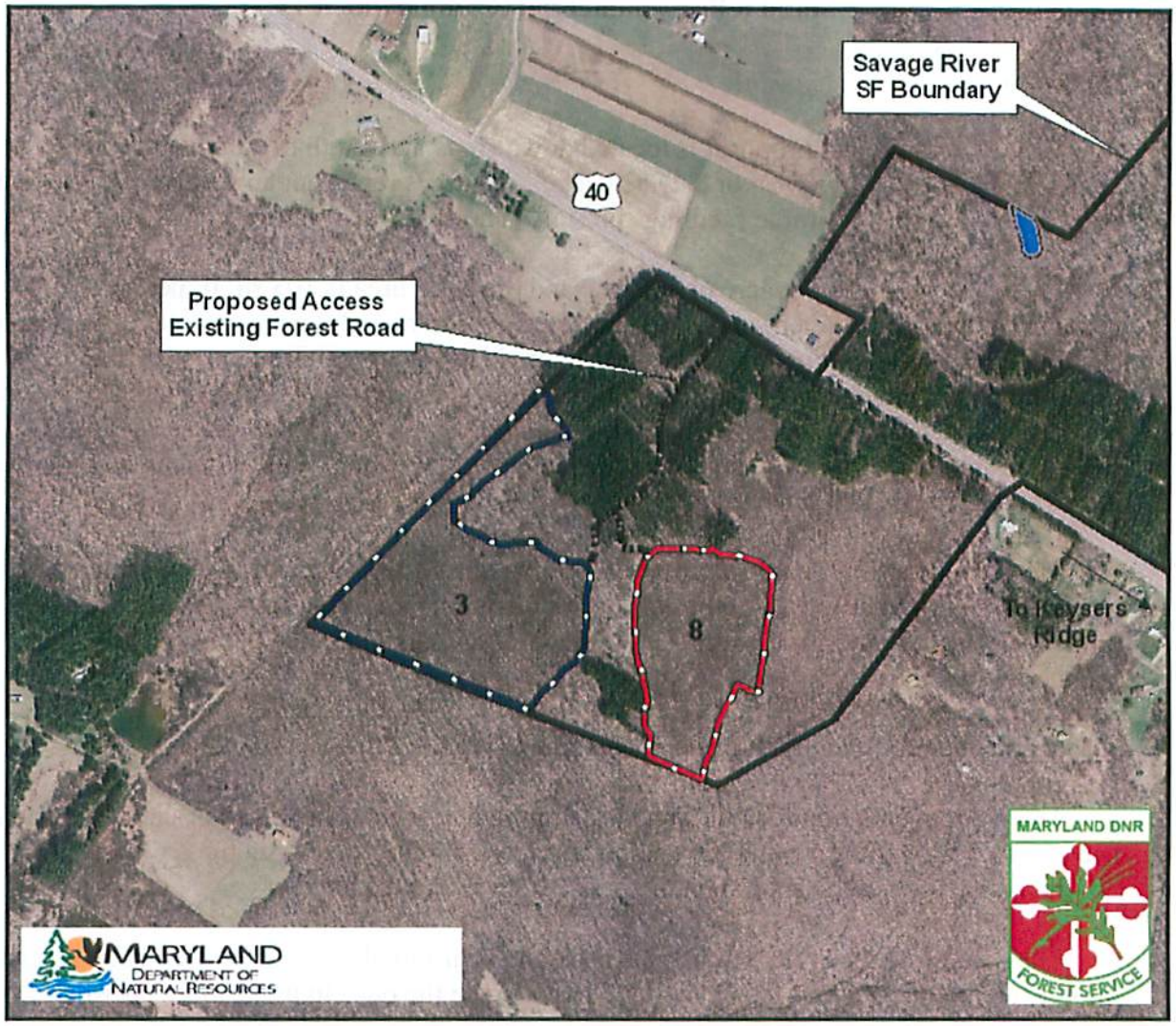
- Streams and 50' Buffers
- Harvest Areas




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 1**
**Stand 3 Approximately 17 Acres**
**Stand 8 Approximately 11 Acres**

N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
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- Harvest Areas

**Silviculture project – Stand 8 Pre-commercial (Compartment 1)**

Description

This 11 acre project proposal is located down slope and south of Route 40. It is approximately 1 ½ miles west of Keyers Ridge. The trees represent an Allegany hardwood type. There are few desirable seedlings present. The area was thinned in 1983.

There are 861 trees per acre on this site and the basal area is 103 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are black cherry and red maple. Other trees present include: pin cherry, black locust sweet birch and northern red oak. There are 25 red oak trees per acre in the sapling and small poletimber size class. The sparse advanced regeneration includes black cherry, spruce, and oak. The understory vegetation includes fern, grass, witch hazel and striped maple.

The site has a south-eastern aspect and drains into Mill Run and the slope ranges up to15 percent. The dominant soil is Albrights very stony silt loam. This soil is poorly to moderately well drained and equipment limitations are moderate due poor drainage. The productivity of the site is average with the site index ranging from 65 - 75 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a crop tree release. The red oaks should be released because they are falling behind the competing trees. Without releasing the red oaks now it is not likely that we will be able to maintain oak in the forest canopy.

The oaks should be released using a hack and squirt method whereby herbicide is injected into the competing stems. This release will encourage the oaks to make rapid growth.

Then 5 years after the completion of this project the stand should be examined again to determine if the process needs to be repeated.

**Silviculture project – Stand 42/Commerical Thinning (Compartment 4)**

Description

This 14 acre project proposal is located upslope and north of Route 40. It is approximately 1 mile northwest of Posey Row and Route 40. The trees represent a mixed hardwood type. There are few desirable seedlings present.

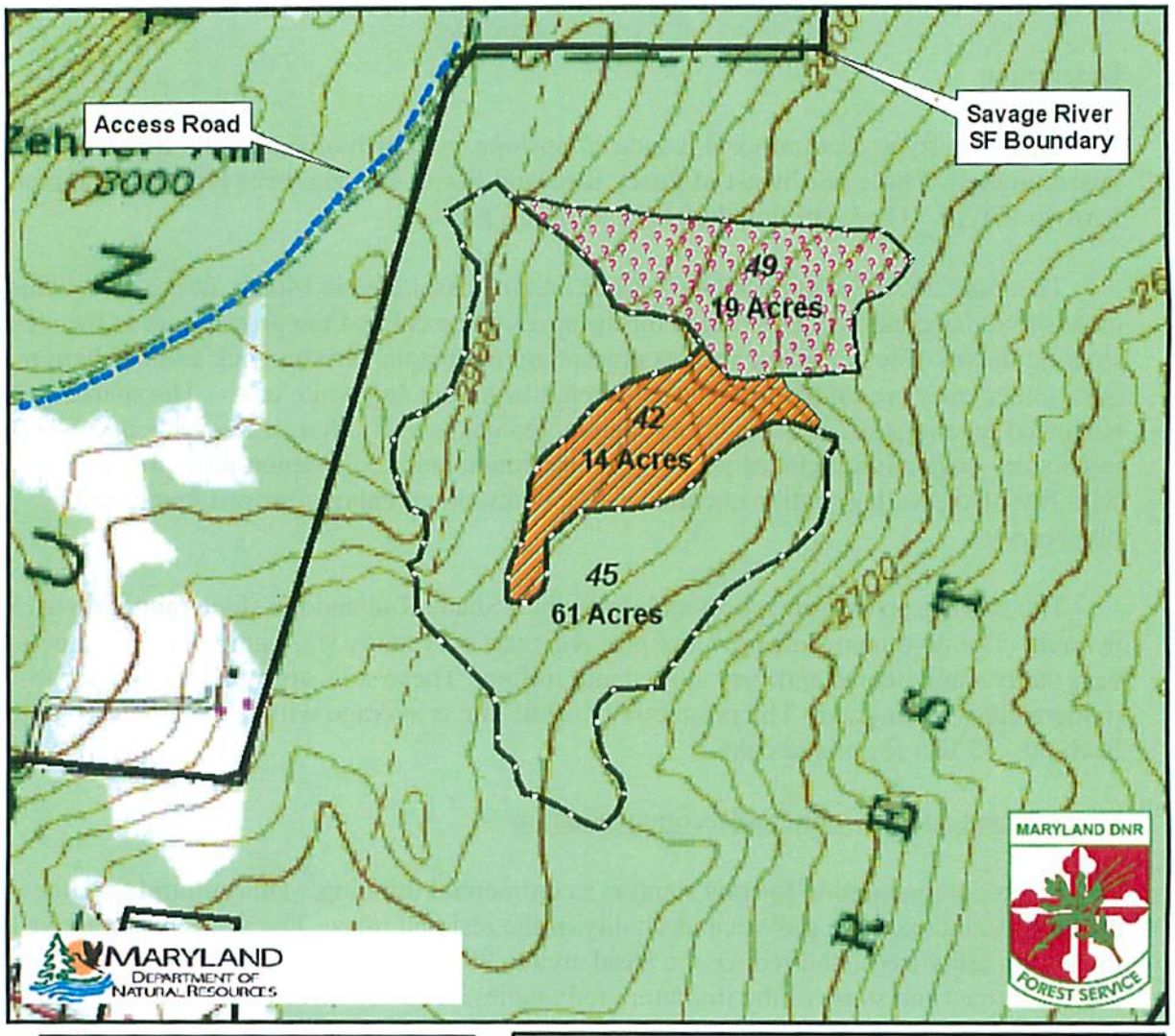
There are 557 trees per acre on this site and the basal area is 140 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are red maple, chestnut oak and northern red oak. Other trees present include: sweet birch, black gum and white oak. The sparse advanced regeneration consists of: red maple, red oak, sweet birch, and service berry. The understory vegetation includes witch hazel, mountain laurel, cinnamon fern, princess pine, wild lily-of-the-valley, Indian cucumber root, common greenbriar, striped maple and blueberry.

The site has an eastern aspect and drains into Shade Run and the slope ranges up to15 percent. The dominant soils are Cookport & Ernest very stony silt loam; Dekalb & Leetonia very stony sandy loams and very stony land, rolling. These soils are stony and poorly to moderately well-drained. The productivity of the site is average with the site index ranging from 60 - 75 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a commercial thinning. This cultural practice is designed to increase the growth and vitality of the residual trees. The focus is to remove all the poor quality trees, and reduce the basal area to 90 sq. ft. by removing the rest from the pole size trees and some of the immature red maples. The dead trees should be left standing.

In ten years this stand should be re-examined for a shelterwood cut to begin the regeneration process. At which time the competing understory plants should be controlled.




**Savage River State Forest**
**Harvest Proposals FY 2013**
**Compartment 4 Stands 42,45,49**

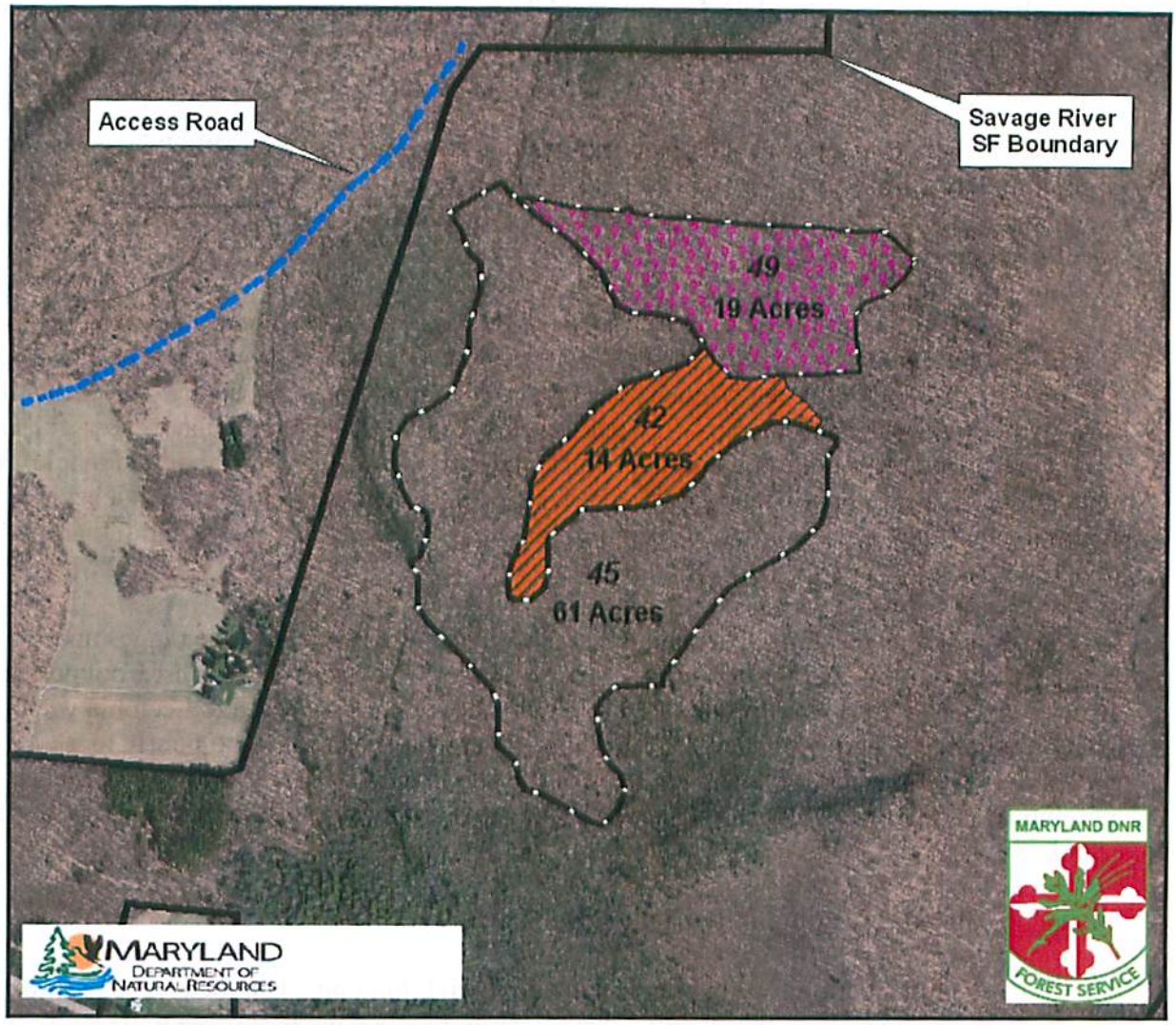
N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area




**Savage River State Forest**
**Harvest Proposals FY 2013**
**Compartment 4 Stands 42,45,49**

N

1:660

340 170 0 340 680 1,020 1,360

Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area

**Silviculture project – Stand 45/Commerical Thinning (Compartment 4)**

Description

This 61 acre project proposal is located upslope and north of Route 40. It is approximately 1 mile northwest of Posey Row and Route 40. It surrounds the north, west and south sides of stand 42. The trees represent a mixed hardwood type. There are desirable seedlings present.

There are 401 trees per acre on this site and the basal area is 157 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are red maple, northern red oak and chestnut oak. Other trees present include: white oak, sweet birch, black gum and black cherry. The sparse advanced regeneration consists of black cherry, white oak, red oak and red maple. The understory vegetation consists of witch hazel, striped maple, mountain laurel, blueberry, trillium, hairy disporum, common greenbriar, bracken fern, New York fern and Indian cucumber root.

The site has an eastern aspect and drains into Shade Run and the slope ranges up to15 percent. The dominant soils are Brinkerton & Andover, very stony silt loams; Cookport & Ernest very stony silt loam; Dekalb & Gilpin, very stony loams; Dekalb & Leetonia very stony sandy loams and very stony land, rolling. These soils are stony and poorly to moderately well-drained. The productivity of the site is rather variable with the site index ranging from 50 - 80 feet for mixed oaks. There are a number of large rock out-crops in this stand.

Management and Silvicultural Recommendations

The recommendation for this stand is a commercial thinning. The focus is to remove all the poor quality trees, ½ of the standing dead trees and reduce the basal area to 95 sq. ft. by removing from the pole size trees and some of the immature red maples. Any exotic invasives should be controlled before the thinning begins. The rock outcrops should be buffered.

In ten years this stand should be re-examined for a shelterwood cut to begin the regeneration process. At which time the competing understory plants should be controlled.

**Silviculture project – Stand 49/Commerical Thinning (Compartment 4)**

Description

This 19 acre project proposal is located upslope and north of Route 40. It is approximately 1 mile northwest of Posey Row and Route 40. Its southwest border is shared with stand 45. The trees represent a mixed hardwood type. There are few desirable seedlings present.

There are 458 trees per acre on this site and the basal area is 149.2 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are red maple and northern red oak. Other trees present include: chestnut oak, sweet birch, white oak and black gum. The sparse advanced regeneration consists of black cherry, red oak, white oak and service berry. The understory vegetation consists of striped maple, witch hazel, interrupted fern, cinnamon fern, hayscented fern, wild lily-of-the-valley, Indian cucumber root and dewberry.

The site has an eastern aspect and drains into Shade Run and the slope ranges up to15 percent. The dominant soils are Cookport & Ernest very stony silt loam; and very stony land, rolling. These soils are stony and poorly to moderately well-drained. The productivity of the site is variable with the site index ranging from 50 - 75 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a commercial thinning. The focus is to remove all the poor quality trees and reduce the basal area to 100 sq. ft. by removing from the pole size trees and some of the immature red maples. All the standing dead trees should be left. Any exotic invasives should be controlled before the thinning begins.

In ten years this stand should be re-examined for a shelterwood cut to begin the regeneration process. At which time the competing understory plants should be controlled.

**Silviculture project – Stand 14/Commerical Pulpwood Thinning (Compartment 77)**

Description

This 11 acre project proposal is located upslope and north of Meadow Mountain Run. It is approximately 1/3 mile northwest of Glendale Road and the road to compartment 77. It shares it western border with the compartment and eastern border with stand zero. The trees represent an oak-hickory type. There are few desirable seedlings present. The stand was thinned in the early 1990s.

There are 647 trees per acre on this site and the basal area is 114.1 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are white oak, red maple and northern red oak. Other trees present include: black cherry, chestnut oak, white pine, pignut hickory and other conifers. The sparse advanced regeneration consists of black cherry, red maple, white oak and red oak. The understory vegetation includes: hayscented fern, woods fern, dewberry, grass, striped maple, blueberry, wild lily-of-the-valley, yam and witch hazel.

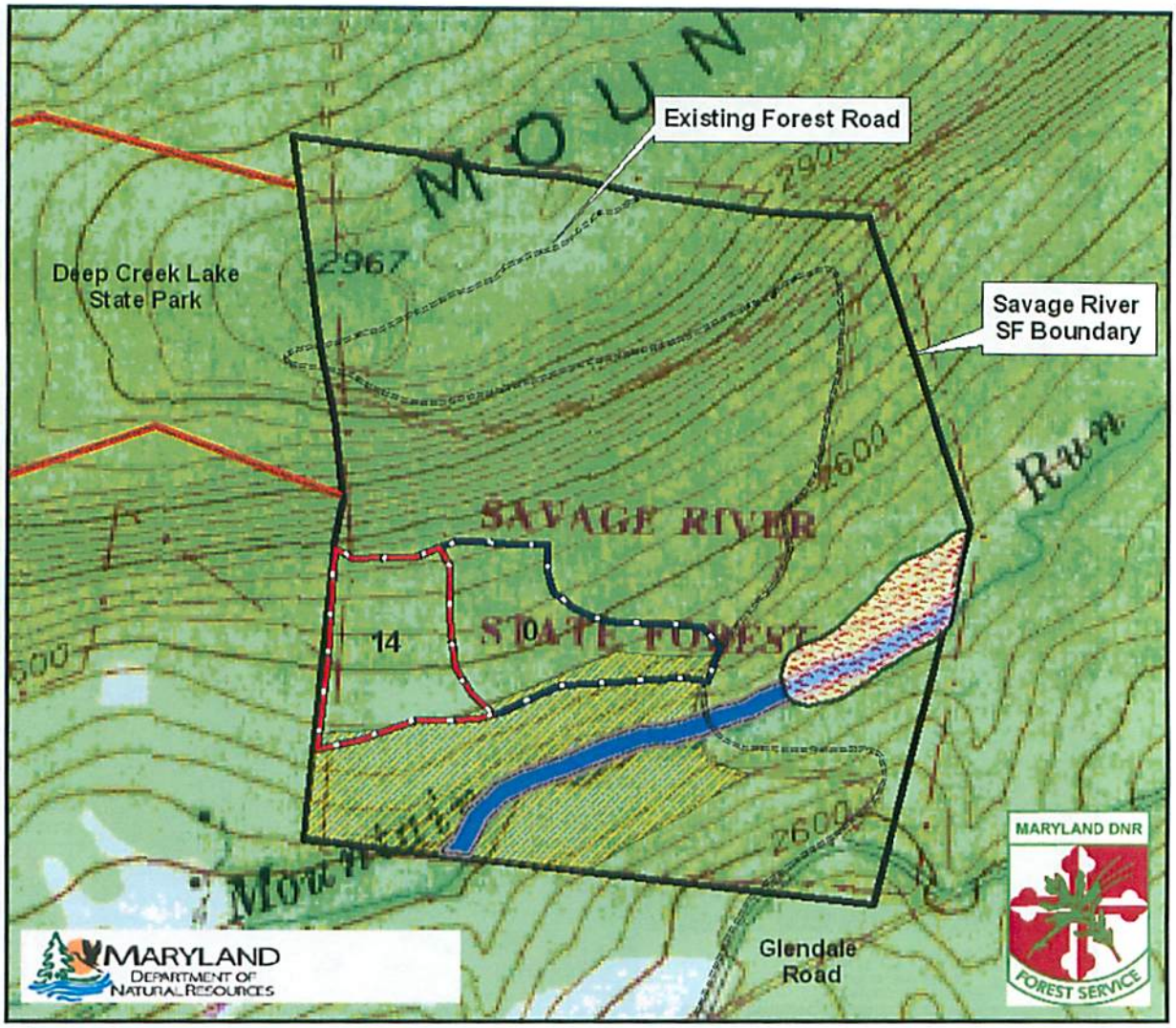
The site has a southern aspect and drains into Meadow Mountain Run and the slope ranges up to15 percent. The dominant soil is Albrights very stony silt loam. This soil is poorly to moderately well drained and equipment limitations are moderate due poor drainage. The productivity of the site is average with the site index ranging from 65 - 75 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a prep-cut for a shelterwood regeneration sequence. The goal of this prep cut is to establish advance regeneration by increasing the light to the forest floor. Prior to cutting the ferns, grasses and tall woody competition should be controlled by herbiciding them. Any exotic invasives should be controlled before the thinning begins as well. The focus is to remove all the pulpwood sized trees and reduce the basal area to 70 sq. ft. by removing a few poor quality small sawlog size trees and some of the immature red maples. Depending on the density and type of competing vegetation a prescribed fire may be used after the harvest instead of or in conjunction with the herbicide.

All the standing dead trees should be left.

In ten years this stand should be re-examined for a shelterwood seed-tree cut to begin the regeneration process. At which time any competing understory plants should be controlled.



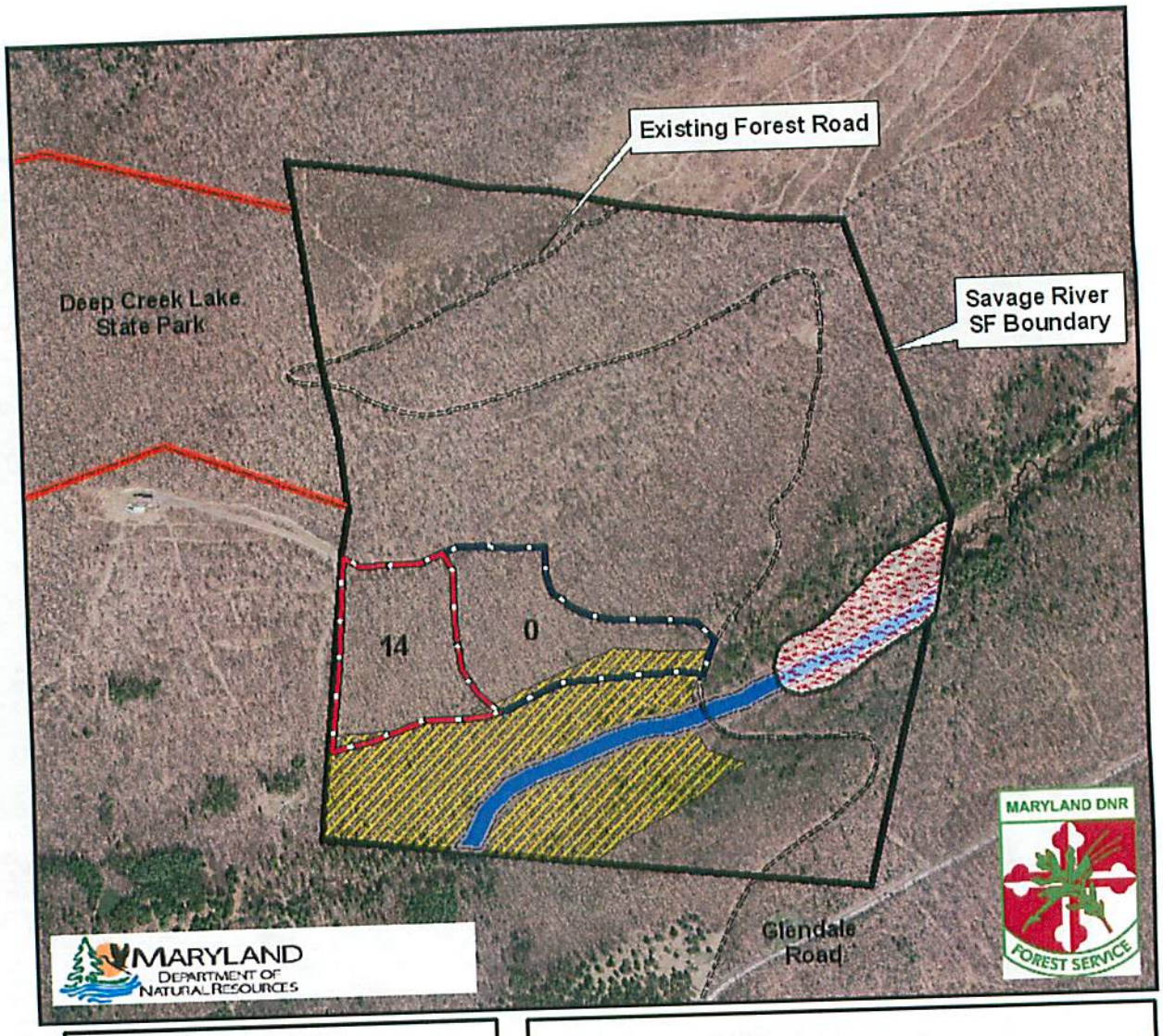

**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 77**
**Stand 0 Approximatley 13 Acres**
**Stand 14 Approximately 11 Acres**

N

1:660

340 170 0 340 680 1,020 1,360
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Areas




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 77**
**Stand 0 Approximatley 13 Acres**
**Stand 14 Approximately 11 Acres**

N

1:660

340 170 0 340 680 1,020 1,360
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Areas

**Silviculture project – Stand Zero/Commercial Pulpwood Thinning (Compartment 77)**

Description

This 13 acre project proposal is located upslope and north of Meadow Mountain Run. It is approximately 1/3 mile northwest of Glendale Road and the road to compartment 77. It shares it western border with stand 14 and eastern border with stand 18. The trees represent a mixed oak type. There are few desirable seedlings present. The stand was thinned in the early 1990s.

There are 504 trees per acre on this site and the basal area is 109.2 sq. ft. per acre. This means that the stand is greater than 110 percent stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are white oak, red maple and northern red oak. Other trees present include: American beech, black cherry, cucumber tree, chestnut oak, scarlet oak and black gum. The sparse advanced regeneration consists of black cherry, white oak, red maple, service berry and red oak. The understory vegetation includes: hayscented fern, New York fern, dewberry, wild lily-of-the-valley, witch hazel, blueberry, and striped maple.

The site has a southern aspect and drains into Meadow Mountain Run and the slope ranges up to15 percent. The dominant soil is Albrights very stony silt loam. This soil is poorly to moderately well drained and equipment limitations are moderate due poor drainage. The productivity of the site is average with the site index ranging from 65 - 75 feet for mixed oaks.

Management and Silvicultural Recommendations

The recommendation for this stand is a prep-cut for a shelterwood regeneration sequence. The goal of this prep cut is to establish advance regeneration by increasing the light to the forest floor. Prior to cutting the ferns, grasses and tall woody competition should be controlled by herbiciding them. Any exotic invasives should be controlled before the thinning begins as well. The focus is to remove all the pulpwood sized trees and reduce the basal area to 70 sq. ft. by removing a few poor quality small saw log size trees and some of the immature red maples. Depending on the density and type of competing vegetation a prescribed fire may be used after the harvest instead of or in conjunction with the herbicide.

Six standing dead trees should be left in the small sawtimber size class the rest can be salvaged.

In ten years this stand should be re-examined for a shelterwood seed-tree cut to begin the regeneration process. At which time any competing understory plants should be controlled.

This stand and stand 14 could be managed together.

**Silviculture project – Stand 44/Commerical Thinning (Compartment 10)**

Description

This 21.7 acre project proposal is located on the western slope of Negro Mountain. It is approximately 1.2 mile northeast of Bowman Hill Road on a Forest Service road. It shares it western border with stands 13 & 30 and eastern border with stand 29. The trees represent a mixed hardwood type. There are few desirable seedlings present.

There are 403 trees per acre on this site and the basal area is 157.7 sq. ft. per acre. This means that the stand is over-stocked for the species present and the growth rate of the stand is slowing down. The dominant species present are red maple, northern red oak and yellow poplar. Other trees present include: black cherry, sweet birch, sugar maple, yellow birch, white oak, service berry, chestnut oak, mockernut hickory, eastern hemlock, and white ash. The sparse advanced regeneration consists of black cherry, red maple, red oak, black locust, sweet birch and cucumber. The understory vegetation includes New York fern, hayscented fern, woods fern, striped maple, witch hazel, violets, rhododendron, wild lily-of-the-valley, common greenbriar and trillium.

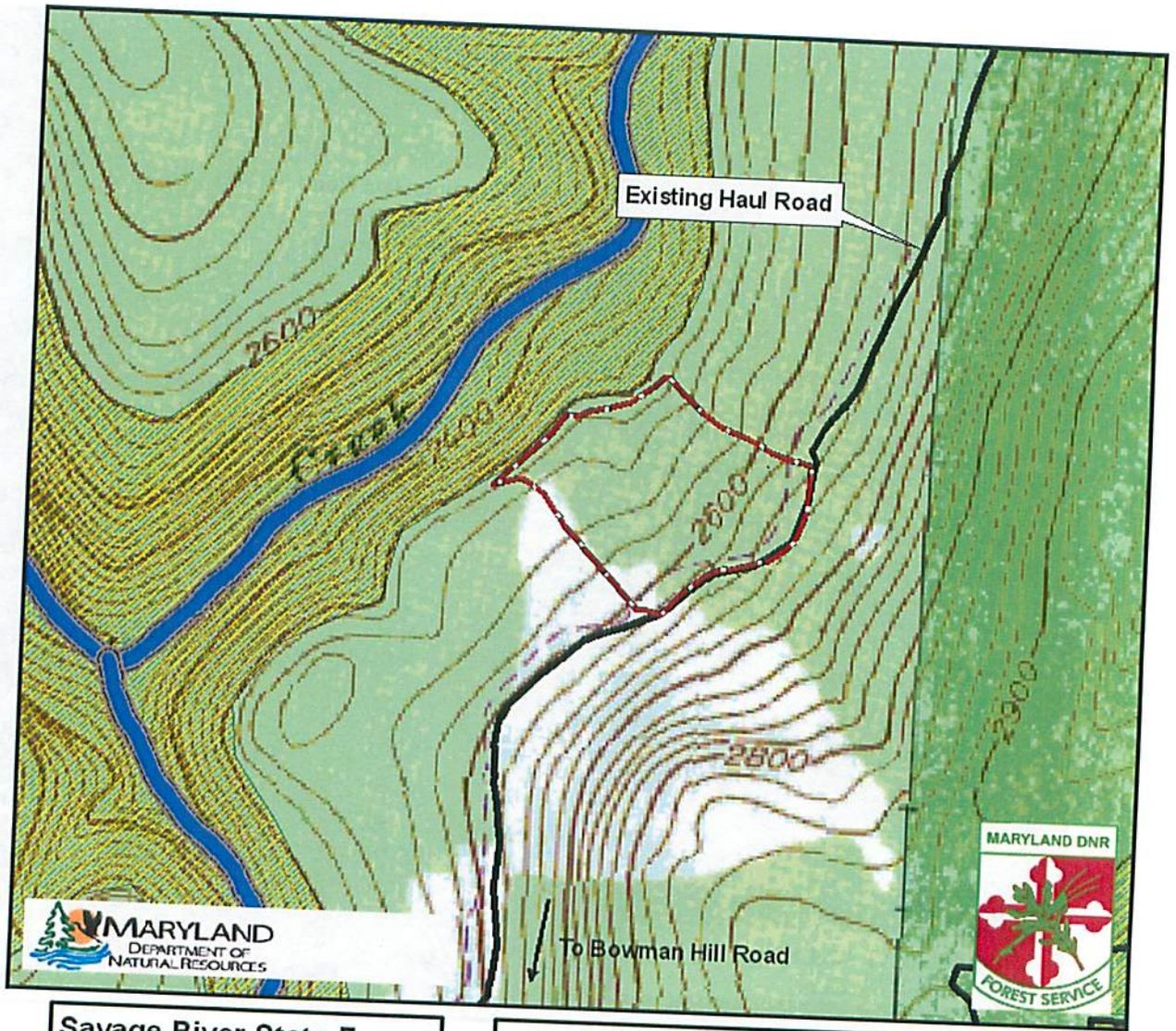
The site has a northeast aspect and drains into Little Bear Creek and the slope ranges up to15 percent. The dominant soils are Cookport and Ernest very stony silt loam. This soil is well drained and equipment limitations are moderate due poor drainage. The productivity of the site is good with the site index ranging from 75 - 85 feet for mixed oaks. The next most dominant soils are the Ladig very stony loams. This soil is well drained and equipment limitations are associated with steep slopes. The productivity of the site is good with the site index ranging from 75 - 85 feet for mixed oaks. There are some rock outcrops in places.

Management and Silvicultural Recommendations

The recommendation for this stand is a prep-cut for a shelterwood regeneration sequence. The goal of this prep cut is to establish advance regeneration by increasing the light to the forest floor. Prior to cutting the ferns, grasses and tall woody competition should be controlled by herbiciding them. Any exotic invasives should be controlled before the thinning begins as well. The focus is to remove all the pulpwood sized trees and reduce the basal area to 100 sq. ft. by removing a few poor quality small sawlog size trees and some of the immature red maples. Depending on the density and type of competing vegetation a prescribed fire may be used after the harvest instead of or in conjunction with the herbicide.

All the standing dead trees should be left.

In ten years this stand should be re-examined for a shelterwood seed-tree cut to begin the regeneration process. At which time any competing understory plants should be controlled.



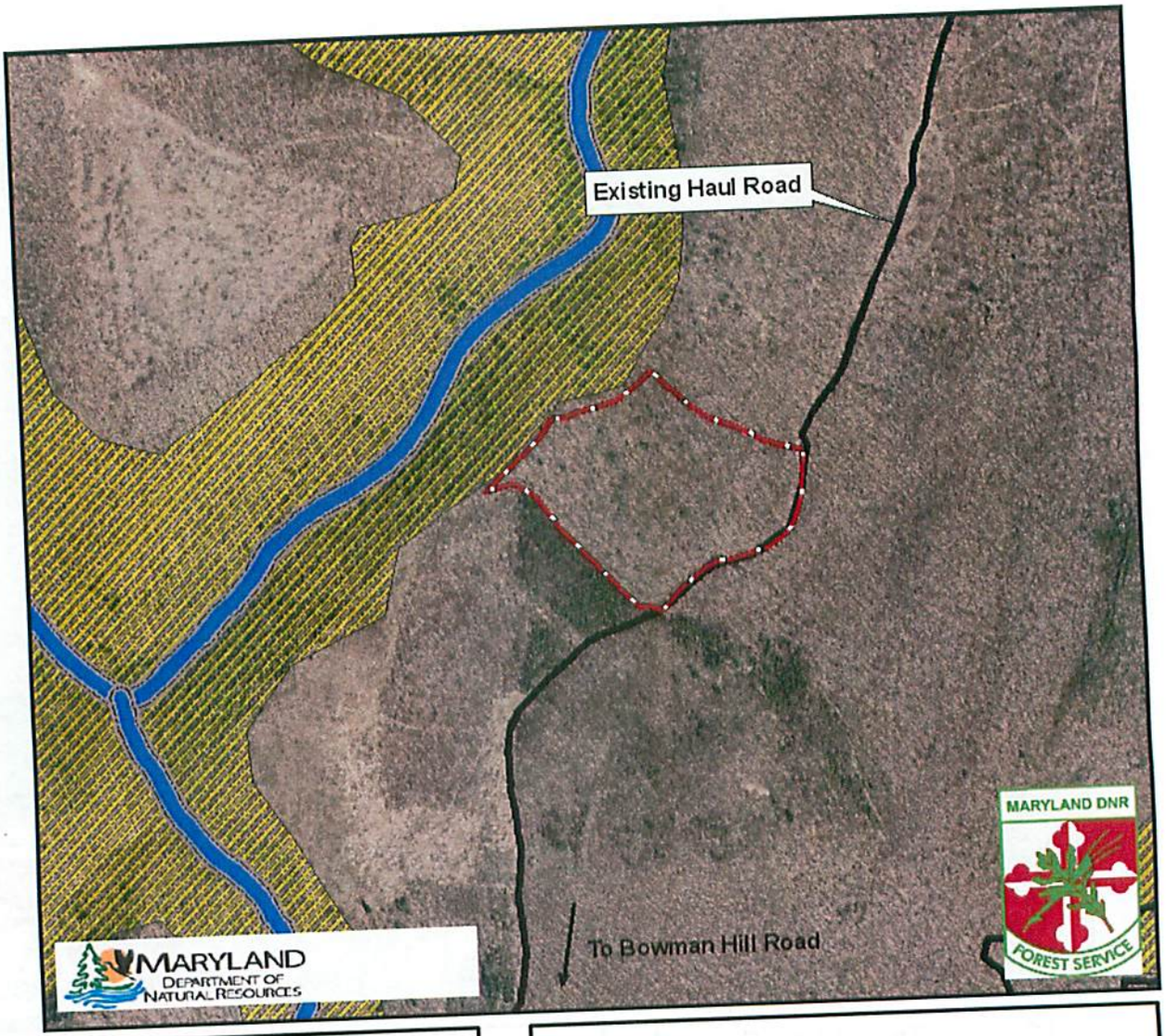

**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 10**
**Stand 44**
**Approximately 22 Acres**

N

1:660

330 165 0 330 660 990 1,320
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area




**Savage River State Forest**
**Harvest Proposal FY 2013**
**Compartment 10**
**Stand 44**
**Approximately 22 Acres**

N

1:660

330 165 0 330 660 990 1,320
Feet

- Wildlands
- Environmentally Sensitive Areas
- Old Growth
- Old Growth Ecosystem Area
- Wetlands of State Concern
- Streams and 50' Buffers
- Harvest Area

## G. Watershed Improvement Projects

In fiscal year 2011, the Bureau of Mines formally brought to the staff a plan to reduce the acidity in the headwaters of the Casselman River Drainage. It is expected that this will actually take place in FY 2012 or early in FY 2013. The Bureau of Mines and their contractors will be implementing this project. The forest staff's role will be limited to oversight and protection of forested resources.

## H. Ecosystem Restoration Projects

In fiscal year 2012 the Inland Fisheries Service and the staff at SRSF submitted a grant request to implement a "chop and drop" program where woody biomass is selectively added to Big Run to improve habitat for brook trout. If effort is successful we will continue the program in other streams in FY 2012.

## I. Monitoring Projects

On going silvicultural timber operations will be monitored at least weekly and more often during adverse weather conditions.

Regeneration harvests will be monitored 5 and 10 years after harvest.

Three ongoing research projects will likely continue in FY 2013.

## J. Budget (ESTIMATE)

The Budget for Savage River State Forest is $585,698. Of that amount, $272,514 goes to fund classified salaries and benefits for four employees; $98,792 goes to fund four contractual employees, and $87,135 to Garrett County in lieu of taxes payment, leaving $127,257 to operate the forest on. Savage River has for many years generated revenue that greatly exceeded its cost of operation. The majority of revenue is obtained from the sale of forest products. Successful marketing by selling the mix of species and grades of wood products that the market most demanded contributed substantially to successful revenue generation over the years.

**Operational Management**

1. Introduction

This section of the plan is designed to cover the annual cost and revenues associated with the operational management of Savage River State Forest State Forest (SRSF). It is the Department's intent that all revenues generated from SRSF will be used to pay for the management and operation of the Forest. The numbers expressed in this section are only estimates and averages of annual expenses and revenues. These numbers will fluctuate each year based on management prescriptions, economic conditions and public use of the forest.

The following information is a breakdown of Revenues and Operational costs associated with SRSF. These figures are only estimates that are based on projected revenues and operational expenses. Yearly changes in timber markets and weather conditions can severely affect revenues. Operational expenses will vary from year to year and the numbers below are based on the budget request submitted for FY-2013

2. SRSF Funding Sources: Estimated - $585,698

State Forests in Maryland are funded from several sources. The first source is the revenue generated by the forests. These funds are deposited in the Department of Natural Resources' Forest or Park Reserve Fund and must be appropriated by the General Assembly through the annual budgeting process before being spent. The state forest budget is prepared approximately one year before the beginning of the fiscal year in which it will be spent. The budget then goes through the legislative approval/review process along with all other state operating budgets. Once adopted, the budget goes into effect the first day of the fiscal year (July 1st). Revenue generated by the state forest is designated special fund revenue. There may be special funds provided from the Department of Natural Resources' Forest or Park Reserve Fund that are not generated by this particular forest or there may be less special funds shown in the budget than was generated on this specific forest. $300,000

The second source is included in the Maryland Forest Service's Off Road Vehicle (ORV) Budget. This separate budget is based on revenue generated from ORV permit sales statewide and is allocated back to the state forests through the budgeting process. ORV funds generated as permit sales at SRSF do not necessarily reflect funds allocated back to the SRSF operating budget. These funds must be appropriated before being spent. ORV funds are a restricted special fund and can only be spent for ORV Trail related expenditures. $17,000

3. Operational Cost: Estimated Annual Expenses - $585,698

Operational expenses are those costs paid directly out of the SRSF operational budget by the State Forest Manager. The Forest Manager prepares a proposed operational budget for the forest based on instructions provided approximately one year in advance of the fiscal year. The FY-2013 budget proposal was prepared in July of 2011.

***-Classified Salaries, Wages and Benefits:*** $272,514

This cost is associated with Special Funds which are state tax revenues provided annually. These funds are used to pay SRSF Maryland Classified Employee Salaries.

***-Contractual Staffing:*** $98,792

This cost is associated with contractual staffing associated with operations of the state forest. Contractual personnel are responsible for conducting work outlined in the annual work plan, managing the daily activities on the forest, including boundary line work, maintenance of trails, forest roads, maintaining primitive campsites, a public shooting range, overlooks, wildlife habitat areas, and implementing all maintenance, recreational, silviculture, and ecosystem restoration projects.

- ***Land Operation Cost:*** $127,257

This includes expenses for office and field equipment, vehicles, gates, gravel, signs, boundary paint, roadwork contracts and construction, trash removal from illegal dumping, boundary line work & surveying, tree planting, site preparation, control of invasive species, non-commercial thinning and other forest management practices. These costs vary greatly from year to year based on the activities identified in the Annual Work Plan.

- ***County Payments:*** $87,135

These are revenue payments to local county governments which will vary every year. Payments are made on an annual basis to Garrett County based on 25% of the gross revenue generated from SRSF. These payments come out of revenue generated from timber sales and recreation. These payments are used to help the counties offset the loss in property tax revenues which are not paid on state owned lands.

4. Summary

This is the general breakdown on Revenues and Operational Costs associated with the SRSF. As described, these figures will vary from year to year.

| | |
|---|---|
| Total Revenue | $585,698 |
| Total Expenditure | $585,698 |

**Savage River State Forest**
ID Team Annual Work Plan FY 2013
August 24, 2011

Attendance: Mary Ironside (Parks), Jim Mullen (Wildlife), Greg Bartles (NRP), Scott Boylan (MDE), Bob Webster, Jack Perdue, Wade Dorsey, Scott Campbell, Rick Latshaw (Wildlife), Ed Thompson (Natural Heritage), Matt Sell (Fisheries), John Wilson (LAP), Steve Carr (LAP).

## Forest Manager Introductions and Work Plan Summary

### Special Projects

The recreation plan is not been completed but hopefully will be finished this year then implemented in Fiscal Year 13. The ID team will get a copy of the draft plan

Garrett Trails has gotten money to implement its plan. It is believed that Garrett County will actually be responsible for the construction of the trail while Garrett trails will be responsible for the maintenance. Garrett Trails may be involved in the construction as well. The ID team will get a copy of the final draft plan when received by SRSF staff.

Scott Boylan with MDE stated that permits will be necessary the groups involved should be aware these take time and can delay the progress.

Stand level data collection is progressing.

Deer fencing will proceed with input from wildlife.
Will be experimenting with fire and chemical spraying to better ensure regeneration.

Aspen Regeneration - working to maintain an Aspen component in the forest.

Margroff Place has gas storage facilities Savage River staff will develop and maintain early successional stages using a field border harvest to maintain a soft edge.

John Wilson asked about gas storage is. Jean Lippard would have any agreement documents. Wade learned that she doesn't have any. This will require further investigation. Texas Eastern is the company, but we are not sure of our agreement with them.

### Bowman Hill Thinning - Compartment 4-5

This proposal is a thinning of spruce and red pine plantation with some hardwood component.

### Compartment 12 Stand 12

This is in an ESA. Heritage requests to buffer cinnamon fern areas. They also request to be involved in the marketing of the timber. Ed says not to cable through the firm. Scott

Campbell stated he believes this will not affect the sale area by much. The boundaries would be adjusted in the field.

**Compartment 1 Stand 32**
This is a thinning proposal. There was some discussion on the best access but otherwise no concerns with this proposal.

**Compartment 1 Stands 3 & 8**
No discussion or concerns.

**Compartment 4 Stands 15, 42, 45, and 49**
The ID Team stated that they would like to see Stand 15 regarding water issues, specifically springs. Stand 15 was a concern as part of a previous work plan proposal. Know where the rock outcrops are and work around them.

**Compartment 77 Stand 14 & 0**
Pulpwood thinning from below. This stand borders an ESA. Any location concerns can be worked out in the field.

**Compartment 10 Stand 44**
Commercial thinning to increase regeneration, a thinning from below. The is a dense stand. Will use a feathering approach close to the ESA.

**Bureau of Mines**
This project is still working its way through the review process. Hope to begin working on this fiscal year or perhaps next.

**Ecosystem projects**
May include some projects to put wood (dropping a few trees) into the streams to create/enhance habitat.

**Monitoring Projects**
Harvest activities are monitored at least weekly or more often if weather is an issue. Regeneration harvests will be monitored at 5 and 10 years for regeneration success. There are currently three ongoing research projects, cohosh, pollinator and chestnut. See the annual work plan for more detailed information. There are other monitoring projects such as Allegheny woodrat, Dan Feller that has been ongoing for more than 20 years. This research should be available to managers but there are concerns that this could be abused by poachers. It was stated that this information should not be put online.

The public sometimes asks about activity in the forests and making some of the research and monitoring activity could help "sell" the benefits of the multitude of sustainable management. Getting this information to Parks could be a good outlet.

The Savage River staff should contact members of the ID team to gain monitoring and research information on the state forests.

**Texas Eastern**
It was suggested by the ID Team that we know where are lands do and don't have the mineral rights, especially in light of the Marcellus shale pressures facing public land managers.

**Savage River Lodge**
The team will visit trail sites here possible realignment to move traffic away from the stream.

Land Acquisition and Planning can assist with in design and provide input to the ID team for review. The SRL is getting 150 Garrett College 150 students to assist with the trail work at Compartment 40. Their goal is to clean and improve the trails. The staff should be aware that too many people not knowing how to properly install trails may be create a problem and their work should be monitored.

**ORV Trails**
The SRSF staff is been asked to identify trails replacing those that have been closed. There is some concern that the same issues plaguing the current trail system would be moved to another area.

**Negro Mountain Trail**
This whole trail currently exists and is open to snowmobiles. There is consideration to open to ORV traffic.

**St. John's Rock Trail Proposal** - Compartment 47 this proposal is new to ORV list and involves an old abandoned mine site with an 8 mile loop. Mike Garner could possibly be an information source for mines (he is in charge of the abandoned mine program).

To assist with ORV maintenance and monitoring we could consider a camp host-like self-monitoring program to affect social acceptance shift.

**Field Visits**

**Mount Aetna Trail** - There is discussion to move the trail away from stream. The ID team visited the site and agrees with the proposal but placement has yet to be determined.

**Mt. Aetna Trail #2** - the eastern side of the red trail. Proposal here is to reroute the trail away from steep slopes and proposes to cross the stream. There was no obvious solution. One option could have people cross the stream or get a timber bridge. The best option seems to proceed with the rough and stream crossing and staff will monitor traffic for necessary upgrading

**Bowman Hill - Compartment 12 Stand 12**
Heritage is concerned with this thinning. This practice would require a burn treatment, then the thinning, and later a harvest. This area is a secondary boundary of the wetland and is nearly all in an ESA. The cinnamon fern usually is a good designation of a wet area. The proposal is to first control the New York and sensitive fern. This area has been designated as HCVF. The question is does this proposal contribute to the purpose of the HCVF. This proposal will be delayed until a better delineation of the ESA can be developed.

***NOTE*** The discussion regarding this proposal led to an awareness that there needs to be a better refinement of the ESA delineations. This must be a collective effort, and should be done within the next year. This initially will require a field team choosing several ESA sites to do field work with the purpose to better delineate ESAs. This effort could include heritage, forestry, wildlife and fisheries.

Savage River Citizen's Advisory Committee
Summary Comments on
FY 2013 AWP

- Concern was expressed about pruning and encouraging apple trees on the forest in the presence of Chronic Wasting Disease in deer.
- Apen regeneration - No comments
- Margroff Field Border Cuts – No comments
- Bowman Hill conifer thinning – No comments
- Bowman Hill hardwood thinning – No comments
- Keyers Ridge hardwood thinning – No comments
- Keyers Ridge pre-commercial thinning – No comments
- Zahner Hill hardwood thinning (stand 42, 45, & 49) – No comments
- Zahner Hill hardwood thinning (stand 15) – Concern was expressed regarding the amount of wet areas and the large rock outcropping present – site visit was made.
- Glendale Road hardwood thinning – Concern was expressed regarding the proximity of the sale to an environmental sensitive area (ESA).
- Concern was expressed that we should have better information on the density and impact of deer in the areas that we will be working in.
- Negro Mountain commercial thinning – No comments
- Discussion about the current status of the wood using industry.
- Discussion about insect and disease problems especially Emerald Ash borer
- Discussion of Bureau of Mines Acid Mine drainage project.
- Concern about the details of the Chop and Drop program along Big Run
- Discussion of imposing User fees with in the forest for recreation activities.

From: cpreb@comcast.net
Sent: Saturday, March 24, 2012 11:58 AM
To: Perdue, Jack
Cc: Michael Jackson
Subject: Western Maryland Forest Work Plans 2012

Jack,

I have taken the time to read your well documented work plans for the Savage, Potomac, and Green Ridge state forests. Thoughtful work by everyone who contributed. The objectives are realistic and obtainable.

The bike, hike, pedestrian venues are becoming more clear as recreational demands continue to change.

This is a very good report.

Carl Rebele,

Penn State, Forestry-1950

MDOT/MBPAC Committee since 1994