Appendix

Land Managers, & Forest Products Operators

Sustainable Resource Management Inc., *Pre & Post Harvest Evaluations*

Sites 1 through 5

Pre-Harvest Evaluation

Site 1

3.4 acres

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Site 1 is located in Allegany County Maryland approximately 2 miles southwest of the town of Mount Savage on Route 36.

The harvest area contains 3.4 acres and is bounded on the north by a property line, the south and east by old fields and the west by an unnamed drainage. The boundaries are marked with orange flagging. The sheet was created in 1949 and revised in 1981. The stand is made up of primarily pole size trees. The topography is sloping and the soils are stony.

Vehicle access to the property is sod covered with a two track aggregate surface. On the steeper sections of the access, water running on the surface has cut shallow rills down the slope. The landing area is located approximately 700 feet from Route 36 in an abandoned field. The landing area is sloping to gently sloping and the primary vegetation is goldenrod.

Soil compaction was measured using a penetrometer with a ½" head. In general, plant roots penetrate soils with readings of 200 psi or less fairly easily. Root penetration is moderate at 200 to 300 psi, and poor at levels above 300 psi. At the time of the fieldwork soils throughout the area were extremely dry. Penetrometer readings on the access road and the landing area were in excess of 300 psi in the first 3 inches. The soil in the harvest area is too stony to measure penetration.

GPS coordinates for the access road and Route 36 are 39º 40'29.46" N and 78º 54' 5.40" W. The harvest area was mapped using a hand held GPS unit. A 1:1000 topographic map of the harvest area is located on page 55.

The soil in the harvest area is mapped as Gilpin Channery silt loam, 20-30% slope. These soils are moderately deep, well drained and nearly level to very steep. These soils are limited in there use by stoniness and hazard of erosion. Native vegetation is primarily mixed upland hardwood.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. The three most common species are cherry 59%, red oak 12%, and black locust 9%. Tree form and grade are typical of upland pole stands. Forks, overgrown knots, and some splits are common on the cherry. Stand and stock tables in both Doyle and International Rules can be found on pages 56 and 57.

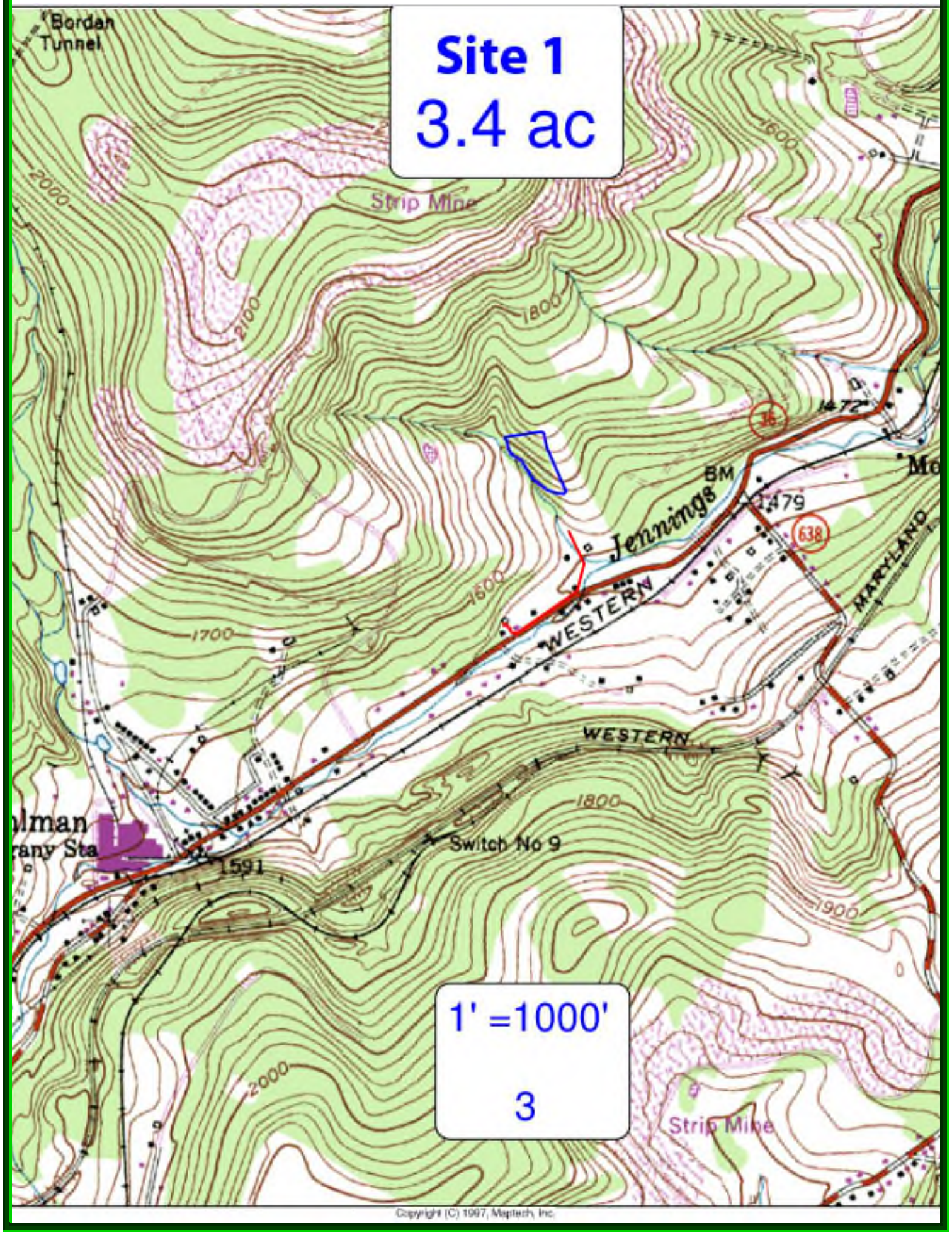
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots was 77.5%. Competing vegetation is not a problem on either of the sample plots (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Multiflora rose is present on the upper 1/3 of the tract and will become a serious problem if not treated before opening the canopy and allowing any more light into the stand.

The weighted average for established regeneration for the two plots is 44.75. Plots are considered adequately stocked under moderate pressure from deer if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R.Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9" for the harvest area was 3.8 cords per acre.

A summary table for regeneration and pulpwood is on page 58.


Site 1
3.4 ac
Bordan Tunnel
Strip Mine
2000
2100
1800
1600
1700
1472
BM
1479
Jennings
638
MARYLAND
WESTERN
WESTERN
1800
Switch No 9
1591
1900
2000
Strip Mine
1' =1000'
3
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Stand and Stock Table

Doyle

Site 1 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	224	297	172	116	0	0	0	0	0	**809**
	UGS	84	58	0	72	0	0	0	0	0	**214**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	0	0	0	0	0	0	0	**14**
CO	AGS	14	29	0	0	0	0	0	0	0	**43**
	UGS	14	0	75	0	0	0	0	0	0	**89**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	459	448	574	0	0	0	0	0	0	**1481**
	UGS	1581	832	1022	0	298	0	0	0	0	**3733**
RM	AGS	140	181	0	0	0	0	0	0	0	**321**
	UGS	182	87	62	72	0	0	0	0	0	**403**
SM	AGS	84	94	158	0	0	0	0	0	0	**336**
	UGS	112	29	110	166	0	0	0	0	0	**417**
Locust	AGS	42	0	0	116	0	0	0	0	0	**158**
	UGS	154	29	96	94	396	0	0	0	0	**769**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	42	0	0	0	0	0	0	0	0	**42**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	72	0	0	0	0	0	**72**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	963	1049	904	232	0	0	0	0	0	3148
	UGS	2183	1035	1365	476	694	0	0	0	0	5753
		3146	**2084**	**2269**	**708**	**694**	**0**	**0**	**0**	**0**	**8901**

Stand and Stock Table

International ¼

Site 1 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ro	AGS	576	578	288	180	0	0	0	0	0	**1622**
	UGS	216	112	0	106	0	0	0	0	0	**434**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	0	0	0	0	0	0	0	**36**
CO	AGS	36	56	0	0	0	0	0	0	0	**92**
	UGS	36	0	132	0	0	0	0	0	0	**168**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	1080	860	968	0	0	0	0	0	0	**2908**
	UGS	3720	1560	1678	0	404	0	0	0	0	**7362**
RM	AGS	360	354	0	0	0	0	0	0	0	**714**
	UGS	468	168	105	106	0	0	0	0	0	**847**
SM	AGS	216	186	261	0	0	0	0	0	0	**663**
	UGS	288	56	183	249	0	0	0	0	0	**776**
Locust	AGS	108	0	0	180	0	0	0	0	0	**288**
	UGS	396	56	156	143	553	0	0	0	0	**1304**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	108	0	0	0	0	0	0	0	0	**108**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	106	0	0	0	0	0	**106**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	2376	2034	1517	360	0	0	0	0	0	6287
	UGS	5268	1952	2254	710	957	0	0	0	0	11141
		7644	**3986**	**3771**	**1070**	**957**	**0**	**0**	**0**	**0**	**17428**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 1 Pre-harvest Date: 10/3/2005

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	80					75.5	yes		130
Plot 2	M	75					14	no		90

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
BC	6		1
BC	7		2
BC	8	1	2
RM	5	3	3
RM	7	1	
RO	5		1
RO	6	1	
RO	7	1	
RO	8	2	

Plot 2

Species	DBH	AGS	UGS
RM	5	1	3
RM	6	2	4
RM	7		1
RM	8	2	1
BC	7		1
BC	8	2	
RO	5	1	
BL	8		1

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
RM				2	100

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
RM				1	51
Ash	1				

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
RM	3				11
Hick	2				
BC	6				

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	15				17
RM	2				

Post-Harvest Evaluation

Site 1

3.4 acres

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Site 1 was harvested during the winter of 2006. The post-harvest fieldwork was conducted in April 2006. The area harvested comprises approximately 3.4 acres. A 1:1000 topographic map of the harvest area is located on page 62.

The post-harvest condition of the road into the area was passable by two wheel drive vehicles. Very minor rutting of the road surface was observed. Rutting appeared to be caused by pickup truck travel through soupy mud on top of a hard road surface. The landing was smooth and vegetated. No soil compaction was evident on the landing. Penetrometer readings using a ½" head were less than 200 psi compared to pre-harvest readings in excess of 300 psi. It should be noted that pre-harvest readings were taken in extremely dry conditions while pos-harvest reading were in moist springtime conditions.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. Post-harvest results are as follows: Stand volume was reduced overall by 43%. Total percentage of AGS increased from 35% pre-harvest to 50% post-harvest. Species composition improved. The three most common species pre-harvest were cherry 59%, red oak 12%, and black locust 9%. Post-harvest, cherry is still the most common at 56%, red oak moves up to 19%, sugar maple moves into third place with 9%, and locust drops down to 6%. The average diameter of the stand increased. The percentage of volume found in trees 14" and larger for the three main species all increased. Cherry 11% to 17%, red oak 28% to 31%, sugar maple 21% to 41%. Stand and stock tables in both Doyle and International Rules can be found on pages 63 and 64.

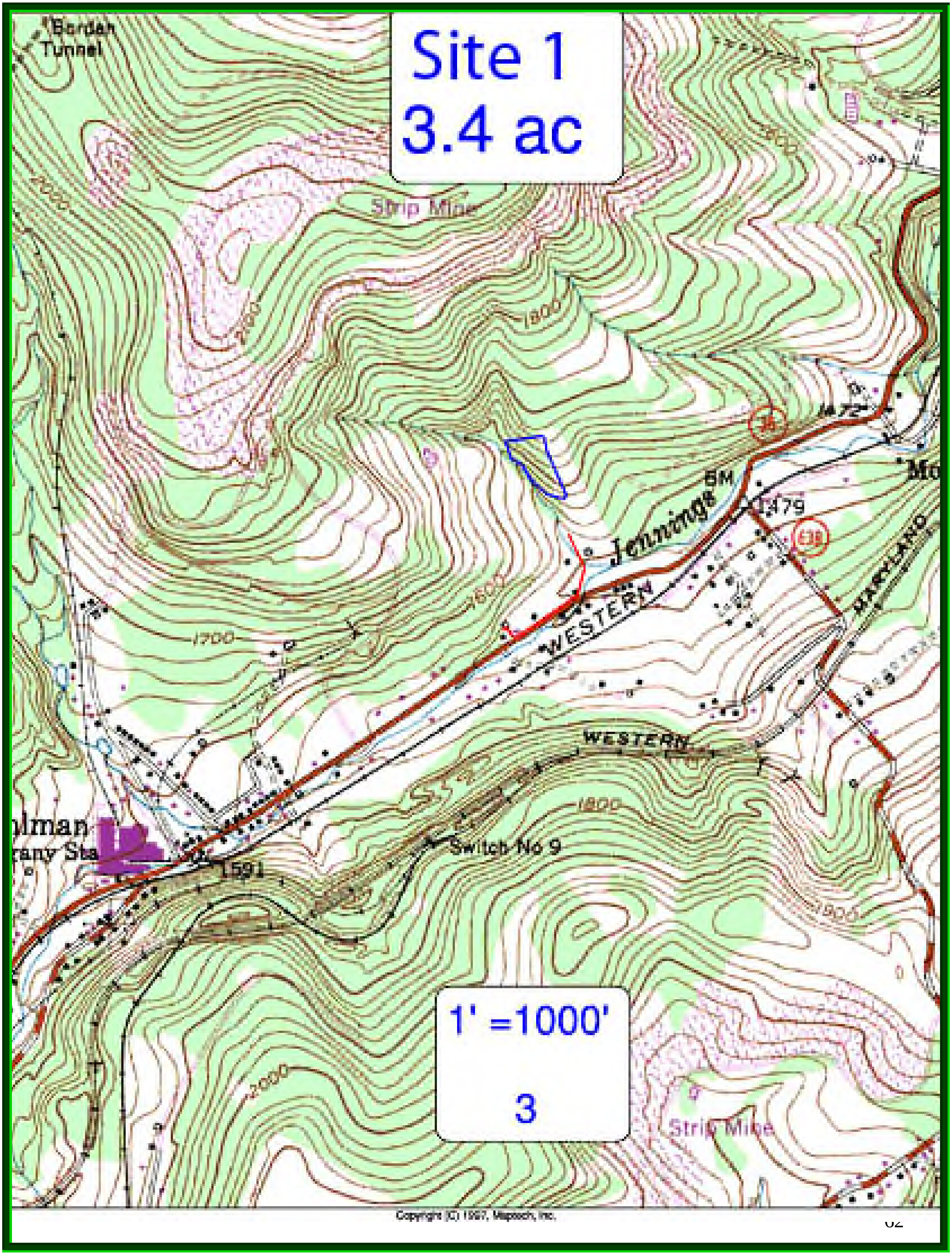
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots was 70%. Competing vegetation is not a problem on either of the sample plots (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Multiflora rose is present on the upper 1/3 of the tract and will become a serious problem if not treated before opening the canopy and allowing any more light into the stand.

The weighted average for established regeneration for the two plots is 12.5. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9" for the harvest area based on the two sample points is 1.9 cords per acre. A summary table for regeneration and pulpwood is on page 65.

Pre and post-harvest photos of the tract can be found on page 66.


Site 1
3.4 ac
Bordah Tunnel
Strip Mine
1800
1700
1600
Jennings
BM
1479
1472
638
WESTERN
MARYLAND
Switch No 9
1591
1900
2000
1' =1000'
3
Strip Mine
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Stand and Stock Table

Doyle

Site 1 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	196	232	110	188	0	0	0	0	0	**726**
	UGS	28	58	144	0	0	0	0	0	0	**230**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
CO	AGS	14	29	0	0	0	0	0	0	0	**43**
	UGS	0	29	0	0	0	0	0	0	0	**29**
Chry	AGS	340	352	470	0	0	0	0	0	0	**1162**
	UGS	612	640	280	0	112	0	0	0	0	**1644**
RM	AGS	140	87	0	0	0	0	0	0	0	**227**
	UGS	84	58	0	0	0	0	0	0	0	**142**
SM	AGS	56	116	96	94	0	0	0	0	0	**362**
	UGS	28	29	48	0	0	0	0	0	0	**105**
Locust	AGS	14	0	0	0	0	0	0	0	0	**14**
	UGS	14	0	48	116	132	0	0	0	0	**310**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	28	0	0	0	0	0	0	0	0	**28**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	760	816	676	282	0	0	0	0	0	2534
	UGS	822	814	520	116	244	0	0	0	0	2516
		1582	**1630**	**1196**	**398**	**244**	**0**	**0**	**0**	**0**	**5050**

Stand and Stock Table

International ¼

Site 1 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	504	448	183	286	0	0	0	0	0	**1421**
	UGS	72	112	234	0	0	0	0	0	0	**418**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
CO	AGS	36	56	0	0	0	0	0	0	0	**92**
	UGS	0	56	0	0	0	0	0	0	0	**56**
Chry	AGS	800	660	768	0	0	0	0	0	0	**2228**
	UGS	1440	1200	454	0	148	0	0	0	0	**3242**
RM	AGS	360	168	0	0	0	0	0	0	0	**528**
	UGS	216	112	0	0	0	0	0	0	0	**328**
SM	AGS	144	224	156	143	0	0	0	0	0	**667**
	UGS	72	56	78	249	0	0	0	0	0	**206**
Locust	AGS	36	0	0	0	0	0	0	0	0	**36**
	UGS	36	0	78	180	184	0	0	0	0	**478**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	72	0	0	0	0	0	0	0	0	**72**
ELM	AGS	0	0	0	0	0	0	0	0		**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0		0	0	0	0	**0**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	1880	1556	1107	429	0	0	0	0	0	4972
	UGS	1980	1536	844	180	332	0	0	0	0	4872
		3860	**3092**	**1951**	**609**	**332**	**0**	**0**	**0**	**0**	**9844**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 1 Post-harvest Date: 4/4/2006

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	70	-	-	-	-	25	yes	-	110
Plot 2	M	70	-	-	-	-	0	no	-	80

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
BC	5		1
BC	6		1
BC	7	1	
BC	8	1	
RO	8	1	
RM	5	3	1
	6		1
	8	1	

Plot 2

Species	DBH	AGS	UGS
RM	5	1	
RM	6	1	
RM	7	3	
BC	8	2	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
RM				1	50

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Appendix

Pre-harvest

Post-harvest

Landing

Access road

Typical stand view

Pre-Harvest Evaluation

Working Woodlot Initiative

Site 2

7.4 acres

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410.798.5626
forests@earthlink.net
www.SustainableResourceManagementInc.com
www.SustainableResourceManagementInc.com

Site 2 is located in Allegany County Maryland approximately 1 mile southwest of the town of Mount Savage on Rolleville Road.

The harvest area contains 7.4 acres and is bounded on the north and south by property lines and the west by open field. The eastern boundary is marked with orange flagging. The Frostburg quadrangle shows most of the harvest area as open land. The sheet was created in 1949 and revised in 1981. In a conversation with the neighbor he referred to the area as having been a brushy cow pasture while he was growing up. Trees in the stand are mostly pole-size. The harvest area also contains an area of approximately 1 acre of mature sawtimber (shown in green on the topographic map). Vegetation and soil surface conditions indicate that this site is seasonally wet.

Vehicle access to the property is sod covered but hard, with aggregate visible through the grass. The access road enters a mowed grassy area of approximately one half acre. This area will serve as the landing. The center of the landing area is wet.

Soil compaction was measured using a penetrometer with a ½" head. In general, plant roots penetrate soils with readings of 200 psi or less fairly easily. Root penetration is moderate at 200 to 300 psi, and poor at levels above 300 psi. At the time of the fieldwork soils throughout the area were extremely dry. Penetrometer readings on the access road and around the edges of the landing area were in excess of 300 psi in the first 3 inches. In the center of the landing readings were less than 200 psi in the first 6 inches and less than 300 psi for the first 15 inches. The soil in the harvest area is too stony to measure penetration.

GPS coordinates for the access road and Rolleville Road are 39º 40'54.51" N and 78º 53' 14.35" W. The harvest area was mapped using a hand held GPS unit. A 1:1000 topographic map of the harvest area is located on page 71.

The soil in the harvest area is mapped as Cavode very stony silt loam, 0-30% slope. These soils are deep, somewhat poorly drained and nearly level to steep. Sandstone fragments approximately 10" in diameter are common on the surface. These soils are severely limited in their use by stoniness, wetness and hazard of erosion. Native vegetation is primarily mixed water tolerant hardwood.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. The three most common species are ash 26%, locust 18%, and red maple 14%. Tree form and grade are typical of pole stands on wet sites. Forks, epicormic branching, overgrown knots, and some splits are common. Stand and stock tables in both Doyle and International Rules can be found on pages 72 and 73.

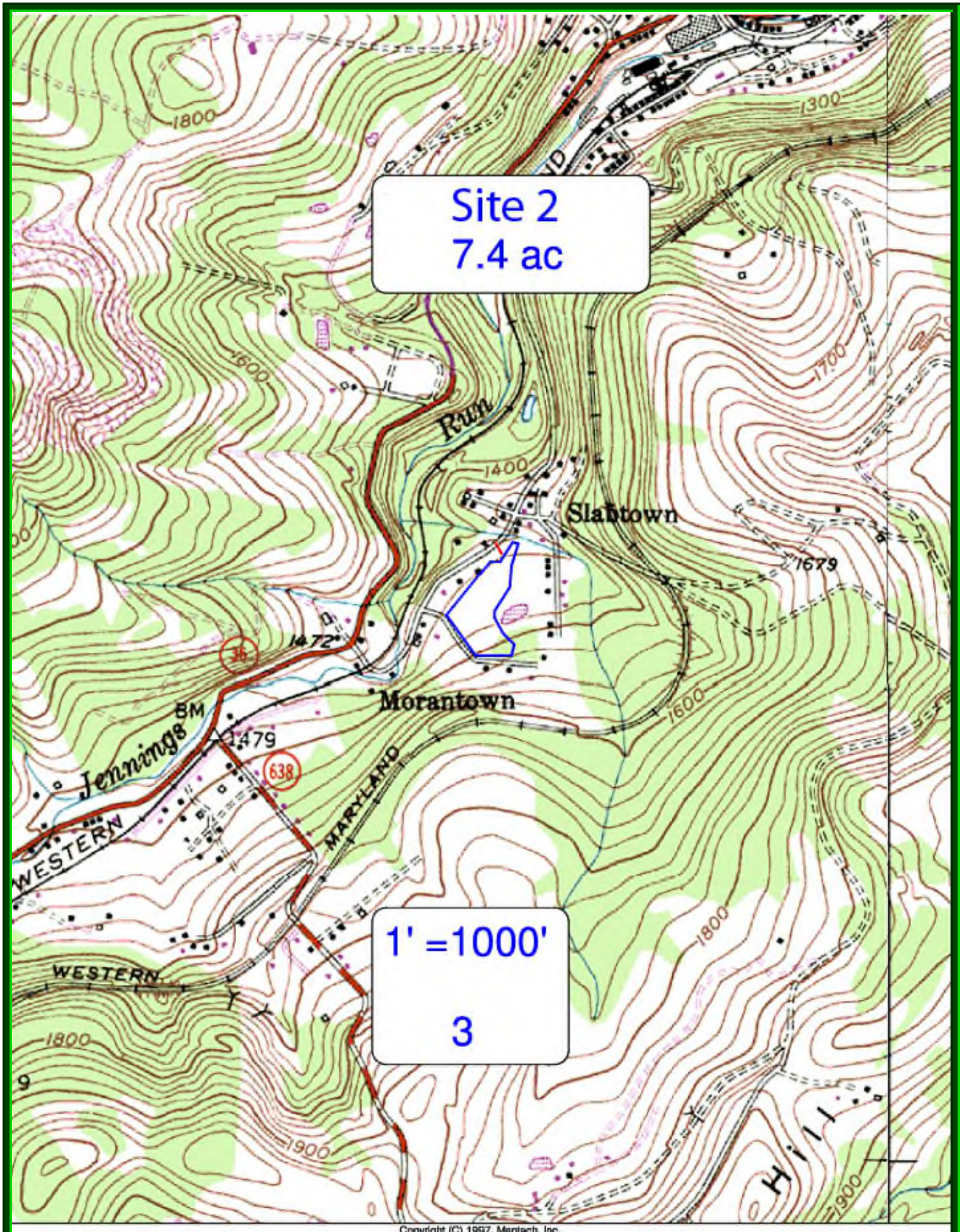
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots is 80%. Competing and invasive woody vegetation is present on both plots but only exceeds 30% on plot 1 (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Bush honeysuckle and hophornbeam are the major competing species.

The weighted average for established regeneration for the two plots is 0.75. Plots are considered adequately stocked under moderate pressure from deer if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2”-1’ (1), 1’-3’ (2), 3’-5’ (20), 5’+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5”-9.9” on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5”-9.9” for the harvest area is 2.26 cords per acre.

A summary table for regeneration and pulpwood is on page 74.



Stand and Stock Table

Doyle

Site 2 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	0	0	75	0	0	0	295	0	0	**370**
	UGS	0	0	0	116	0	0	0	0	0	**116**
Hic	AGS	154	87	0	0	0	180	295	370	0	**1086**
	UGS	14	0	62	0	0	0	0	0	0	**76**
Asp	AGS	0	79	75	0	328	0	0	0	0	**482**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	70	65	62	94	0	225	0	649	882	**2047**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	119	128	236	0	0	0	0	0	0	**614**
	UGS	221	200	121	131	372	251	325	0	0	**1621**
RM	AGS	420	333	206	94	0	0	0	0	0	**1053**
	UGS	658	406	219	116	164	180	0	0	0	**1743**
SM	AGS	126	65	48	94	0	225	0	0	0	**558**
	UGS	70	116	0	144	0	0	0	0	0	**330**
Locust	AGS	196	311	234	458	0	0	0	0	0	**1199**
	UGS	224	326	851	878	100	0	0	0	0	**2379**
Bass	AGS	28	29	62	132	0	0	0	0	0	**251**
	UGS	28	0	0	0	0	0	0	0	0	**28**
Ash	AGS	280	789	515	758	0	0	0	0	0	**2342**
	UGS	518	768	480	470	132	540	0	0	0	**2908**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	48	0	100	0	0	0	0	**148**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	28	29	0	0	0	0	0	0	0	**57**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS0	0	29	0	0	0	0	0	0	0	**29**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	154	58	302	144	0	0	0	0	0	**658**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	0	72	0	0	0	0	0	**86**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	42	65	0	0	0	0	0	0	0	**107**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	42	65	0	0	0	0	0	0	0	**107**
Total	AGS	1393	1886	1513	1761	328	630	590	1019	882	10002
	UGS	2013	2062	2083	2071	868	971	325	0	0	10393
		3406	**3948**	**3596**	**3832**	**1196**	**1601**	**915**	**1019**	**882**	**20395**

Stand and Stock Table

International ¼

Site 2 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ro	AGS	0	0	132	0	0	0	368	0	0	**500**
	UGS	0	0	0	180	0	0	0	0	0	**180**
Hic	AGS	396	168	0	0	0	234	368	441	0	**1607**
	UGS	36	0	105	0	0	0	0	0	0	**141**
Asp	AGS	0	166	132	0	466	0	0	0	0	**764**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	180	130	105	143	0	296	0	774	924	**2552**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	280	240	402	197	0	0	0	0	0	**1119**
	UGS	520	380	199	197	512	323	398	0	0	**2529**
RM	AGS	1080	652	339	143	0	0	0	0	0	**2214**
	UGS	1692	784	366	180	233	234	0	0	0	**3489**
SM	AGS	324	130	78	143	0	296	0	0	0	**971**
	UGS	180	224	0	212	0	0	0	0	0	**616**
Locust	AGS	504	614	417	713	0	0	0	0	0	**2248**
	UGS	576	634	1467	1359	136	0	0	0	0	**4172**
Bass	AGS	72	56	105	210	0	0	0	0	0	**443**
	UGS	72	0	0	0	0	0	0	0	0	**72**
Ash	AGS	720	1546	864	1139	0	0	0	0	0	**4269**
	UGS	1332	1492	813	715	184	701	0	0	0	**5237**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	78	0	136	0	0	0	0	**214**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	72	56	0	0	0	0	0	0	0	**128**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	56	0	0	0	0	0	0	0	**56**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	396	112	495	212	0	0	0	0	0	**1215**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	0	106	0	0	0	0	0	**142**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	108	130	0	0	0	0	0	0	0	**238**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	108	130	0	0	0	0	0	0	0	**238**
Total	AGS	3556	3702	2574	2688	466	826	736	1215	924	16687
	UGS	5128	3998	3523	3161	1201	1258	398	0	0	18667
		8684	**7700**	**6097**	**5849**	**1667**	**2084**	**1134**	**1215**	**924**	**35354**

WWI Pulpwood & Regeneration Summary

Tract: Site 2 Pre-harvest Date: 10/3/2005

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	80	-	-	50	yes	0.5	no	hornbeam	100
Plot 2	M	80	-	-	25	no	1	no	b honey	80

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
RM	5	2	2
RM	6		1
RM	7		1
Ash	6	1	
Ash	9		1
BC	6		1
BC	7		1
P Ch	5		1
HH	6		1
Sm	6	1	
Sm	9	1	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
Hick	1				1

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot 2

Species	DBH	AGS	UGS
Hick	5	1	
Hick	6	1	
Hick	8	1	
Hick	9	1	
Ash	8	1	
RM	6	1	
RO	8	1	

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	1				2
Ash	1				

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Post-Harvest Evaluation

Working Woodlot Initiative

Site 2

7.4 acres

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Sustainable Resource Management, Inc

www.SustainableResourceManagementInc.com

Site 2 was harvested during the winter of 2005/2006. The post-harvest fieldwork was conducted in April 2006. The area harvested comprises approximately 7.4 acres. A 1:1000 topographic map of the harvest area is located on page 78.

The post-harvest condition of the road into the area was passable by two wheel drive vehicles. Very minor rutting of the road surface was observed. Rutting appeared to be caused by pickup truck travel through soupy mud on top of a hard road surface. The landings had logs remaining to be hauled but were relatively smooth. No soil compaction was evident on the landing. Penetrometer readings using a ½" head were comparable to pre-harvest readings

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. Post-harvest results are as follows: Stand volume was reduced overall by 22%. Total percentage of AGS increased from 49% pre-harvest to 62% post-harvest. Species composition improved. The three most common species pre-harvest were ash 26%, black locust 18%, and red maple 14%. Post-harvest, ash is still the most common and moves up to 28%, red maple drops to 13%, locust drops to 12%, and sugar maple moves up from 4% to 9%. The average diameter of the stand increased. The percentage of volume found in trees 14 " and larger increased for red and sugar maple and decreased slightly for locust and ash. Red maple 35% to 36%, sugar maple 58% to 78%, locust 70% to 68%, and ash 55% to 52%. Stand and stock tables in both Doyle and International Rules can be found on pages 79 and 80.

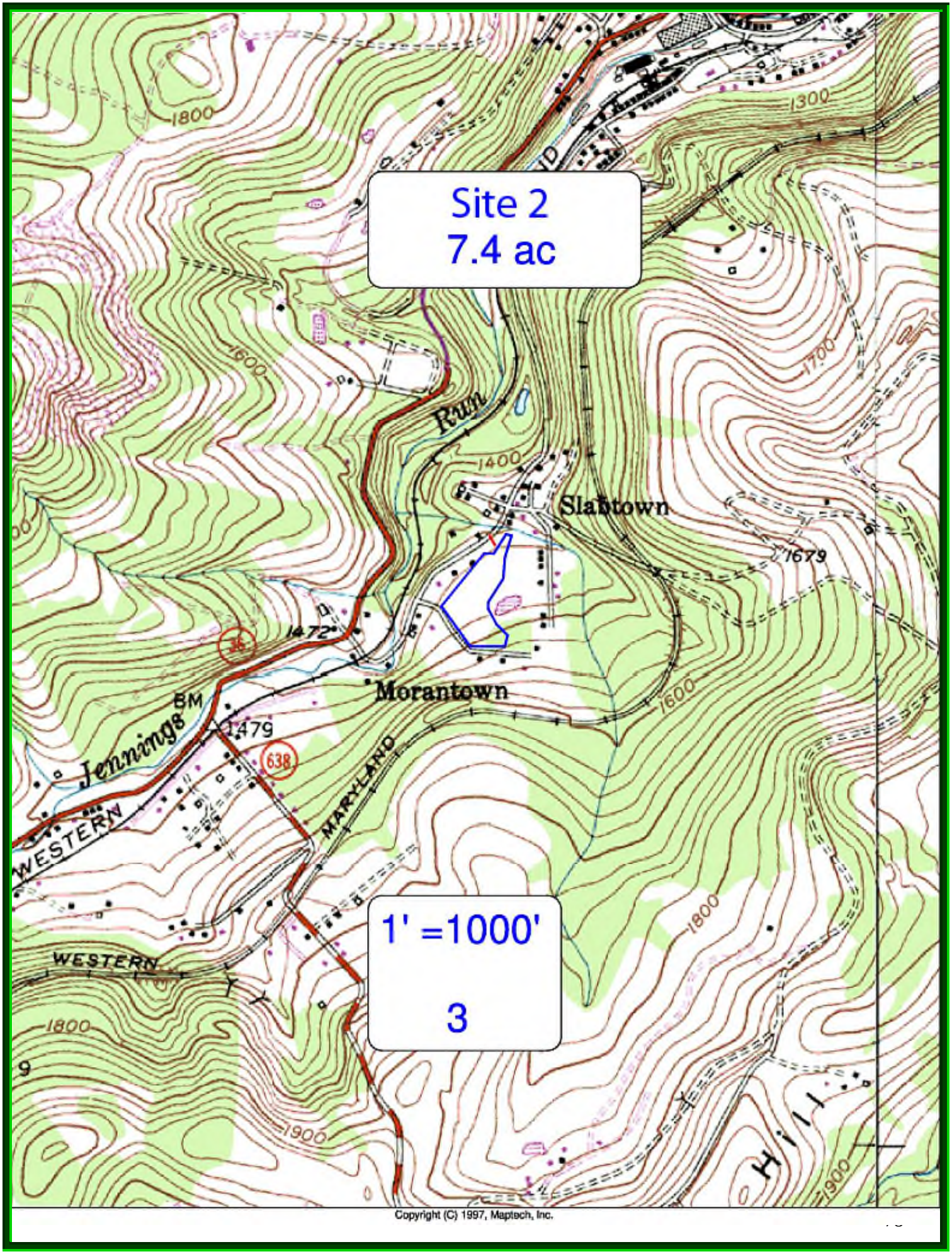
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots was 80%. Competing and invasive woody vegetation is present on both plots but only exceeds 30% on plot 1 (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Bush honeysuckle and hophornbeam are the major competing species.

The weighted average for established regeneration for the two plots is 1.5. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9 " on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R.Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9 " for the harvest area based on the two sample points is 2.17 cords per acre. A summary table for regeneration and pulpwood is on page 81.

Pre and post-harvest photos of the tract can be found on page 82.


Site 2
7.4 ac
1' =1000'
3
Slabtown
Morantown
Run
Jennings
WESTERN
MARYLAND
1800
1300
1600
1700
1400
1679
1472
1479
638
1900
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Stand and Stock Table

Doyle

Site 2 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	0	0	75	94	0	0	295	0	0	**464**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	84	108	0	0	0	135	0	0	459	**786**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Asp	AGS	0	79	150	0	0	0	0	0	0	**229**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	28	29	0	260	0	0	0	879	376	**1572**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	170	160	68	131	0	0	0	0	0	**529**
	UGS	204	96	84	106	186	251	325	0	0	**1252**
RM	AGS	280	268	48	188	0	0	0	0	0	**784**
	UGS	336	434	110	0	0	405	0	0	0	**1285**
SM	AGS	154	116	62	94	0	0	0	0	658	**1084**
	UGS	56	0	0	188	164	0	0	0	0	**408**
Locust	AGS	70	195	75	464	0	0	0	0	0	**804**
	UGS	70	290	296	458	0	0	0	0	0	**1114**
Bass	AGS	14	36	62	132	0	0	0	0	0	**244**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Ash	AGS	294	804	517	1106	0	225	0	0	0	**2946**
	UGS	266	790	282	72	132	0	0	0	0	**1542**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	48	0	132	0	0	0	0	**180**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	28	58	0	0	0	0	0	0	0	**86**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	29	0	0	0	0	0	0	0	**29**
Hornbeam	AGS	154	58	144	72	0	0	0	0	0	**428**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	42	29	0	0	0	0	0	0	0	**71**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	72	0	0	0	0	0	0	0	**72**
Total	AGS	1248	1853	1201	2541	0	360	295	879	1493	6067
	UGS	1030	1726	820	824	614	656	325	0	0	9870
		2278	**3579**	**2021**	**3365**	**614**	**1016**	**620**	**879**	**1493**	**15937**

Stand and Stock Table

International ¼

Site 2 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ro	AGS	0	0	132	143	0	0	368	0	0	**643**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	216	222	0	0	0	171	0	0	528	**1137**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Asp	AGS	0	166	264	0	0	0	0	0	0	**430**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	72	56	0	392	0	0	0	1038	403	**1961**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	400	300	114	197	0	0	0	0	0	**1011**
	UGS	480	180	144	156	256	323	398	0	0	**1937**
RM	AGS	720	522	78	286	0	0	0	0	0	**1606**
	UGS	864	856	183	0	0	530	0	0	0	**2433**
SM	AGS	396	224	105	143	0	0	0	0	718	**1586**
	UGS	144	0	0	286	233	0	0	0	0	**663**
Locust	AGS	180	390	132	720	0	0	0	0	0	**1422**
	UGS	180	560	498	713	0	0	0	0	0	**1951**
Bass	AGS	36	74	105	210	0	0	0	0	0	**425**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Ash	AGS	756	1566	888	1679	0	296	0	0	0	**5185**
	UGS	684	1530	471	106	184	0	0	0	0	**2975**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	78	0	184	0	0	0	0	**262**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	72	112	0	0	0	0	0	0	0	**184**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	56	0	0	0	0	0	0	0	**56**
Hornbeam	AGS	396	112	234	106	0	0	0	0	0	**848**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	108	56	0	0	0	0	0	0	0	**164**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	148	0	0	0	0	0	0	0	**148**
Total	AGS	3172	3632	2052	3876	0	467	368	1038	1649	10845
	UGS	2604	3350	1374	1261	857	853	398	0	0	16254
		5776	**6982**	**3426**	**5137**	**857**	**1320**	**766**	**1038**	**1649**	**27099**

WWI Pulpwood & Regeneration Summary

Tract: Site 2 Post-harvest Date: 4/3/2006

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	80	-	-	50	yes	0.5	no	hornbeam	100
Plot 2	M	80	-	-	20	no	1	no	b honey	70

Pulpwood 37.2

Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
RM	5	2	2
RM	6		1
RM	7		1
Ash	6	1	
Ash	9		1
BC	6		1
BC	7		1
P Ch	5		1
HH	6		1
Sm	6	1	
Sm	9	1	

Plot 2

Species	DBH	AGS	UGS
Hick	5	1	
Hick	6	1	
Hick	8	1	
Hick	9	1	
Ash	8	1	
RO	8	1	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
Hick	1				1

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	1				2
Ash	1				

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Appendix

Pre-harvest

Post-harvest

Landing

Access road

Skid trail

Typical post-harvest stand view

Stream crossing

Pre Harvest Evaluation

Site 3

8.7 acres

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Site 3 is located in Allegany County Maryland approximately 1.3 miles northeast of the town of Flintstone on Route 326, Black Valley Road.

The harvest area contains 8.7 acres and is bounded to the west by a property line and to the north, south and east by woods roads. The property boundary is painted yellow and the boundaries along the roads are not flagged. The property is located on the Flintstone quadrangle. The sheet was created in 1950 and revised in 1984. The stand is made up of primarily pole size trees. The topography is sloping and the soils are stony

Vehicle access to the property is a two track drive with an aggregate surface. The woods roads are soil and native aggregate and are in good condition. The landing area is located approximately 900 feet from Black Valley Road in a field above the Christmas trees. The landing area is gently sloping and the primary vegetation is grass.

Soil compaction was not measured because the soils are too stony for the penetrometer to penetrate.

GPS coordinates for the access road and Route 39 are 39º 43'1.91" N and 78º 33' 18.57" W. The harvest area was mapped using a hand held GPS unit. A 1:500 topographic map of the harvest area is located on page 87.

The soil in the harvest area is mapped as Ellibar very stony silt loam 25-75% slope. These soils are deep, well drained and nearly level to very steep. These soils are limited in their use by stoniness and hazard of erosion but have large moisture holding capacity. Native vegetation is primarily mixed upland hardwood.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. The three most common species are yellow poplar 45%, cherry 36%, and sugar maple 8%. Tree form and grade are typical of upland pole stands. Forks, overgrown knots, and splits are common on the cherry. Stand and stock tables in both Doyle and International Rules can be found on pages 88 and 89.

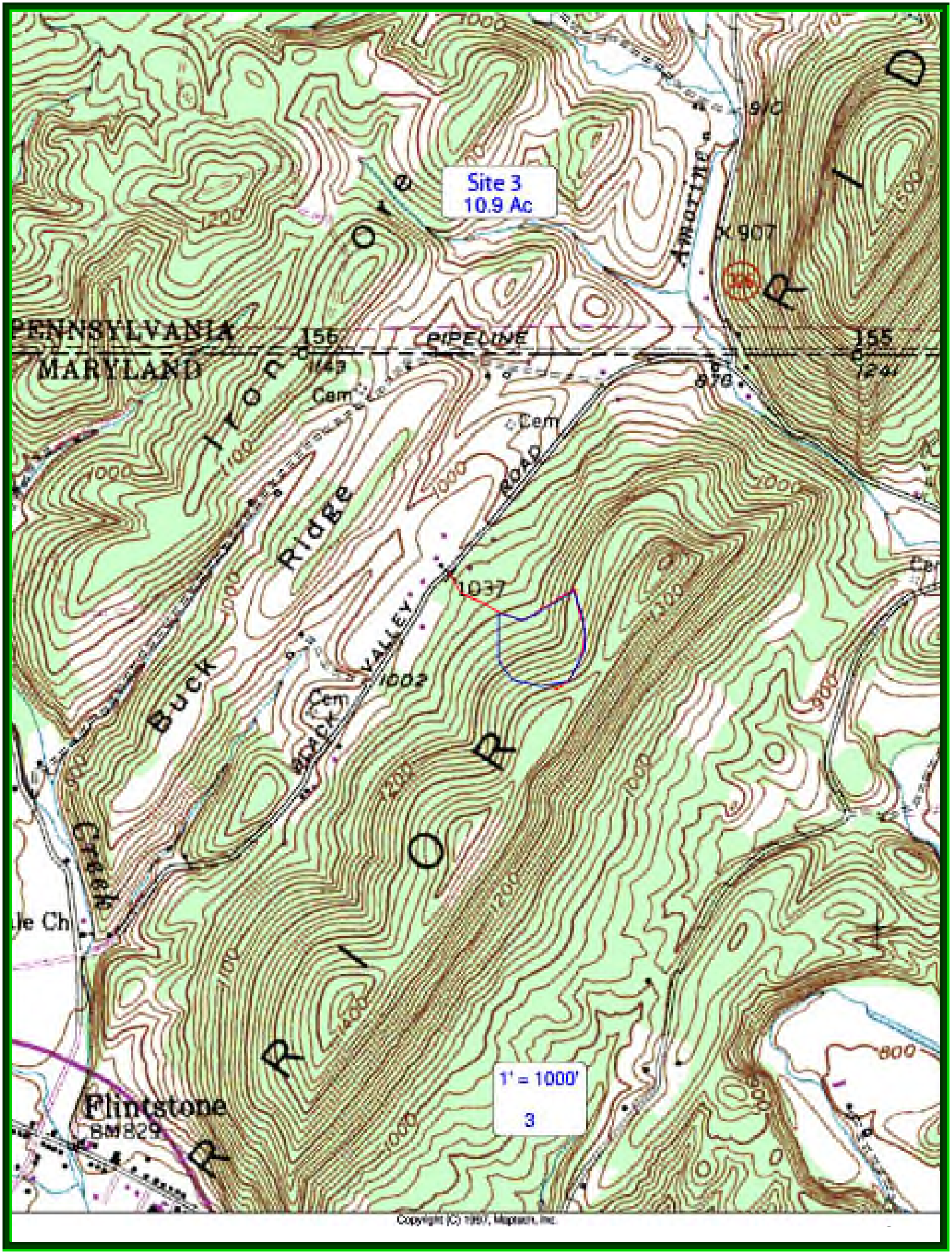
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots was 80%. Competing vegetation is not a problem on either of the sample plots (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Ailanthus is present on the northern 1/3 of the tract and will become a serious problem if not treated before opening the canopy and allowing any more light into the stand.

The weighted average for established regeneration for the two plots is 37.5. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2”-1’ (1), 1 ’-3’ (2), 3’-5’ (20), 5’+ (50). It should be noted that only one of the four regeneration plots had any regeneration present.

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5”-9.9” on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5”-9.9” for the harvest area was 2.4 cords per acre.

A summary table for regeneration and pulpwood is on page 90.



Stand and Stock Table

Doyle

Site 3 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	1022	2952	2973	1940	744	0	0	0	0	**9631**
	UGS	294	448	410	0	0	0	0	0	0	**1152**
RO	AGS	14	0	0	0	190	0	0	0	0	**204**
	UGS	0	0	0	116	0	0	0	0	0	**116**
Hic	AGS	42	0	75	0	0	0	0	0	0	**117**
	UGS	28	0	0	0	0	0	0	0	0	**28**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
CO	AGS	14	0	62	132	0	0	0	370	0	**578**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Chry	AGS	1071	2000	636	151	0	0	0	0	0	**3858**
	UGS	1853	1296	1070	349	0	0	0	0	0	**4568**
RM	AGS	14	0	0	0	0	0	0	0	0	**14**
	UGS	70	0	48	0	0	0	0	0	0	**118**
SM	AGS	126	203	220	166	428	0	0	370	0	**1513**
	UGS	126	29	96	144	100	0	0	0	0	**495**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	196	58	75	0	0	0	0	0	0	**329**
Bass	AGS	14	29	0	0	0	0	0	0	0	**43**
	UGS	42	58	62	0	0	0	0	0	0	**162**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	75	132	0	0	0	0	0	**221**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut/	AGS	0	0	0	0	0	0	0	0	0	**0**
Walnut	UGS	28	29	0	0	132	0	295	0	0	**484**
Sassafras	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	75	0	0	0	0	0	0	**75**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	2317	5184	3966	2389	1362	0	0	740	0	15958
	UGS	2665	1918	1911	741	232	0	295	0	0	7762
		4982	**7102**	**5877**	**3130**	**1594**	**0**	**295**	**740**	**0**	**23720**

Stand and Stock Table

International ¼

Site 3 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	2920	5620	4969	2914	1024	0	0	0	0	**17447**
	UGS	840	840	686	0	0	0	0	0	0	**2366**
Ro	AGS	36	0	0	0	274	0	0	0	0	**310**
	UGS	0	0	0	180	0	0	0	0	0	**180**
Hic	AGS	108	0	132	0	0	0	0	0	0	**240**
	UGS	72	0	0	0	0	0	0	0	0	**72**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
CO	AGS	36	0	105	210	0	0	0	441	0	**792**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Chry	AGS	2520	3760	1054	231	0	0	0	0	0	**7565**
	UGS	4360	2440	1768	501	0	0	0	0	0	**9069**
RM	AGS	36	0	0	0	0	0	0	0	0	**36**
	UGS	180	0	78	0	0	0	0	0	0	**258**
SM	AGS	324	392	366	249	601	0	0	441	0	**2373**
	UGS	324	56	156	212	136	0	0	0	0	**884**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	504	112	132	0	0	0	0	0	0	**748**
Bass	36	36	0	0	0	0	0	0	0	0	**92**
	UGS	108	112	105	0	0	0	0	0	0	**325**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	132	210	0	0	0	0	0	**378**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut/	AGS	0	0	0	0	0	0	0	0	0	**0**
Walnut	UGS	72	56	0	0	184	0	368	0	0	**680**
Sassafras	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	132	0	0	0	0	0	0	**132**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	6016	9828	6626	3604	1899	0	0	882	0	28855
	UGS	6532	3616	3189	1103	320	0	368	0	0	15128
		12548	**13444**	**9815**	**4707**	**2219**	**0**	**368**	**882**	**0**	**43983**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 3 Pre-harvest Date: 3/16/2006

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [50+]	interfering species	Total BA
Plot 1	h	80	-	-	-	-	75	yes	-	160
Plot 2	h	80	-	-	-	-	0	no	-	110

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
BC	5	2	2
BC	6	1	
BC	7	2	
BC	8	2	1
BL	5		1
BL	6		1
BL	8		1
HM	5		2
HM	6	1	
RM	8	1	
Ash	8	1	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
11M				3	150

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot 2

Species	DBH	AGS	UGS
Pop	5		1
Pop	6	1	1
Pop	7	1	
Pop	8	1	
BL	5		1
HM	5		1

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Post-Harvest Evaluation

Site 3

8.7 acres

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Site 3 was harvested during the winter of 2006. The post-harvest fieldwork was conducted in August 2007. The area harvested comprises approximately 8.7 acres. A 1:1000 topographic map of the harvest area is located on page 94.

The post-harvest condition of the road into the area was passable by two wheel drive vehicles. No rutting of the road surface was observed. The landing was smooth and vegetated. The soils on this tract are very stony and no penetrometer readings were taken.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. Post-harvest results are as follows: Stand volume was reduced overall by 7% Doyle rule and 12% Int 1/4 Rule. Total percentage of AGS increased from 60% pre-harvest to 61% post-harvest. Species composition did not change appreciably. The three most common species pre-harvest were poplar 45%, cherry 38%, sugar maple 7%. Post-harvest, poplar is still the most common at 49%, cherry 34%, sugar maple 8%. The average diameter of the stand increased. Pre-harvest the average diameter for AGS was 11.9" and UGS 11.2" post-harvest, AGS 12.6" and UGS 11.6". Stand and stock tables in both Doyle and International Rules can be found on pages 95 and 96.

Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

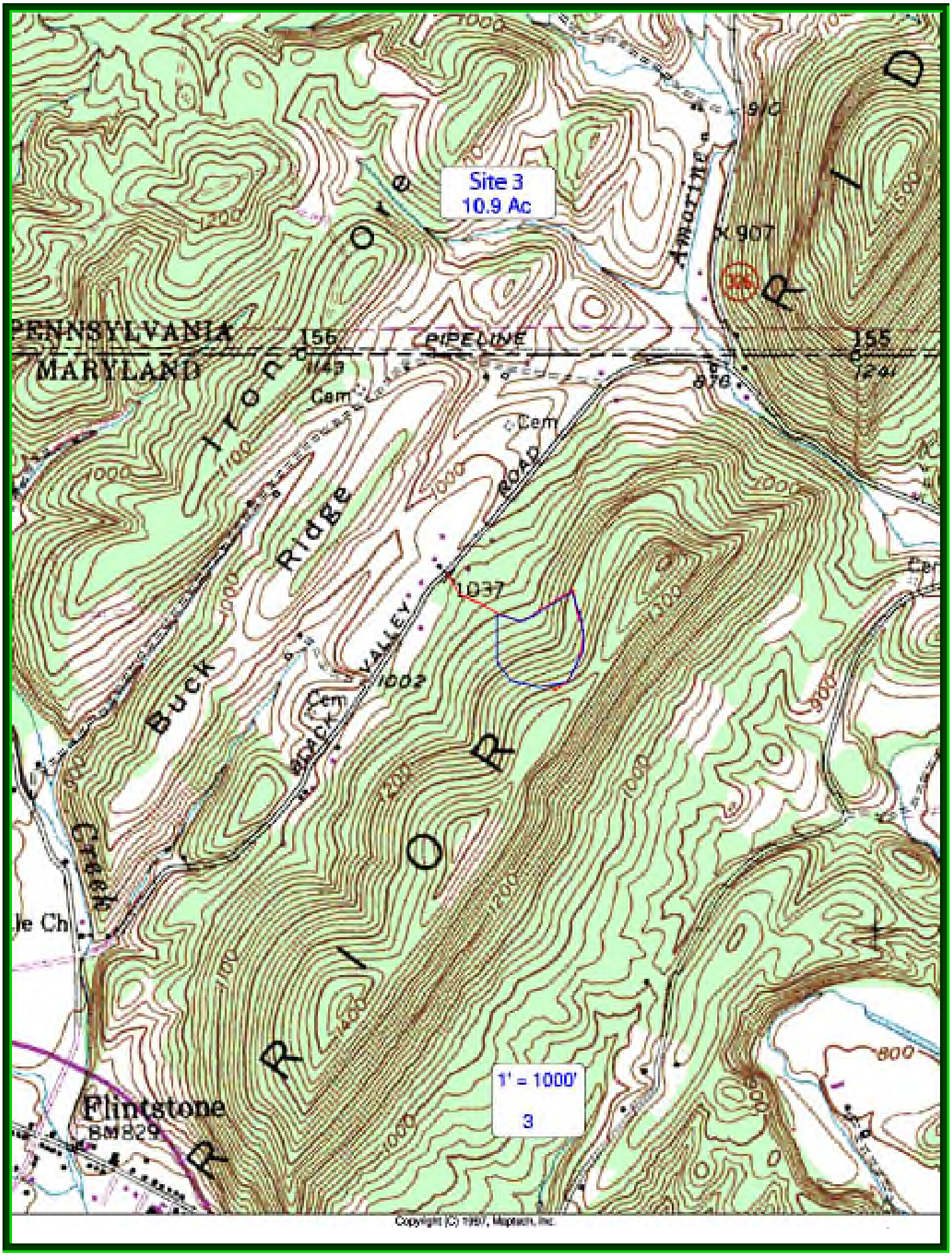
The average canopy density for the sample plots was 82% and is unchanged from pre-harvest evaluation. Competing vegetation is not a problem on either of the sample plots (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). However, stilt grass is expanding in to open areas especially skid trails. Garlic mustard and ailanthus are also present.

The weighted average for established regeneration for the two plots is 3. Plots are considered adequately stocked under heavy pressure from deer if they contain a weighted count of 50 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9" for the harvest area based on the two sample points is 2.0 cords per acre. A summary table for regeneration and pulpwood is on page 97.

Site 3 changed very little pre-harvest to post-harvest. Canopy density remained virtually unchanged. Basal area dropped from 135 pre-harvest to 115 post-harvest, pulpwood cords per acre dropped from 2.4 to 2.0 cords per acre.

Pre and post-harvest photos of the tract can be found on page 98.



Stand and Stock Table

Doyle

Site3 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	392	2240	3482	2212	774	0	0	409	0	**9509**
	UGS	210	296	840	343	0	0	0	0	0	**1689**
RO	AGS	28	0	0	116	164	0	0	0	0	**308**
	UGS	14	29	0	94	0	0	0	0	0	**137**
Hic	AGS	42	0	0	0	0	0	0	0	0	**42**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Blk Walnut	AGS	0	0	0	0	0	0	295	0	0	**295**
	UGS	0	0	0	0	0	135	0	0	0	**135**
CO	AGS	0	29	48	116	0	0	0	370	0	**563**
	UGS	14	0	0	0	0	0	0	0	0	**14**
Chry	AGS	697	1376	696	630	0	0	0	0	0	**3399**
	UGS	1207	1312	833	187	0	0	0	0	0	**3539**
RM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	0	0	0	0	0	0	0	**14**
SM	AGS	56	145	260	188	100	0	0	433	0	**1182**
	UGS	42	29	185	0	528	0	0	0	0	**784**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	112	0	0	0	0	0	0	0	0	**112**
Bass	AGS	14	0	110	0	0	0	0	0	0	**124**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	14	29	0	0	0	0	0	0	0	**43**
	UGS	14	29	0	0	0	0	0	0	0	**43**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	116	0	0	0	0	0	0	0	**130**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	1243	3819	4596	3262	1038	0	295	1212	0	15465
	UGS	1655	1811	1858	624	528	135	0	0	0	6611
		2898	**5630**	**6454**	**3886**	**1566**	**135**	**295**	**1212**	**0**	**22076**

Stand and Stock Table

International ¼

Site 3 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	1120	4200	5784	3328	1069	0	0	480	0	**15981**
	UGS	600	560	1396	509	0	0	0	0	0	**3065**
Ro	AGS	72	0	0	180	233	0	0	0	0	**485**
	UGS	36	56	0	143	0	0	0	0	0	**235**
Hic	AGS	108	0	0	0	0	0	0	0	0	**108**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Blk	AGS	0	0	0	0	0	0	368	0	0	**368**
Walnut	UGS	0	0	0	0	0	171	0	0	0	**171**
CO	AGS	0	56	78	180	0	0	0	441	0	**755**
	UGS	36	0	0	0	0	0	0	0	0	**36**
Chry	AGS	1640	2580	1136	944	0	0	0	0	0	**6300**
	UGS	2840	2460	1365	271	0	0	0	0	0	**6936**
RM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	0	0	0	0	0	0	0	**36**
SM	AGS	144	280	447	286	136	0	0	523	0	**1816**
	UGS	108	56	315	0	738	0	0	0	0	**1217**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	288	0	0	0	0	0	0	0	0	**288**
Bass	AGS	36	0	183	0	0	0	0	0	0	**219**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	36	56	0	0	0	0	0	0	0	**92**
	UGS	36	56	0	0	0	0	0	0	0	**92**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	224	0	0	0	0	0	0	0	**260**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	3156	7272	7628	4918	1438	0	368	1444	0	26124
	UGS	4052	3412	3076	923	738	171	0	0	0	12372
		7208	**10584**	**10704**	**5841**	**2176**	**171**	**368**	**1444**	**0**	**38496**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 3 Post-harvest Date: 8/14/2007

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	H	85			20		3.5		Ail	100
Plot 2	H	80					2.5			130

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
RM	5		1
	6		1
BL	5		2
	6		1
	8		4
Pop	6		1

Plot 2

Species	DBH	AGS	UGS
Sm	5	1	1
	6		1
	7	2	
RM	5	1	
	6		1
BL	5		1
BC	7	1	
	8	1	

Plot A

Species	[1] 2:-	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	7				7

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	1				3
Sm	1				
Hic	1				

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
RM	2				2

Appendix

Pre-harvest

Landing

Woods road

Post-harvest

Landing

Woods road

Stilt grass on skid trail

Pre-Harvest Evaluation

Site 4 Tract

3.6 acres

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Site 4 is located in Allegany County Maryland approximately 2 miles southwest of the town of Mount Savage on Route 36.

The harvest area contains 3.6 acres and is bounded to the north by a property line, and to the south, east and west by old fields. The boundaries are marked with orange paint. The property is located on the Frostburg quadrangle. The sheet was created in 1949 and revised in 1981. The stand is made up of primarily even-aged sawtimber size trees. The area is shown on the topographic map as open land in 1949. The topography is sloping and the soils are stony.

Vehicle access to the property is sod covered with a two track aggregate surface. The landing area is located approximately 200 feet from Route 36 along side the access. The landing area is sod covered.

Soil compaction was measured using a penetrometer with a ½" head. In general, plant roots penetrate soils with readings of 200 psi or less fairly easily. Root penetration is moderate at 200 to 300 psi, and poor at levels above 300 psi. At the time of the fieldwork soils throughout the area were dry. Penetrometer readings on the access road and the landing area were in excess of 300 psi in the first 3 inches. The soil in the harvest area is too stony to measure penetration.

GPS coordinates for the access road and Route 36 are 39º 40'29.46" N and 78º 54' 5.40" W. The harvest area was mapped using a hand held GPS unit. A 1:1000 topographic map of the harvest area is located on page 103.

The soil in the harvest area is mapped as Gilpin very stony silt loam 10-30% slopes. These soils are moderately deep, well drained and nearly level to very steep. These soils are limited in there use by stoniness and hazard of erosion. Native vegetation is primarily mixed upland hardwood.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. The three most common species are cherry 52%, black locust 21%, and sugar maple 16%. Tree form and grade are typical for the area. Forks, overgrown knots, and some splits are common on the cherry. Many of the sugar maple stems have persistent dead limb stubs. Stand and stock tables in both Doyle and International Rules can be found on pages 104 and 105.

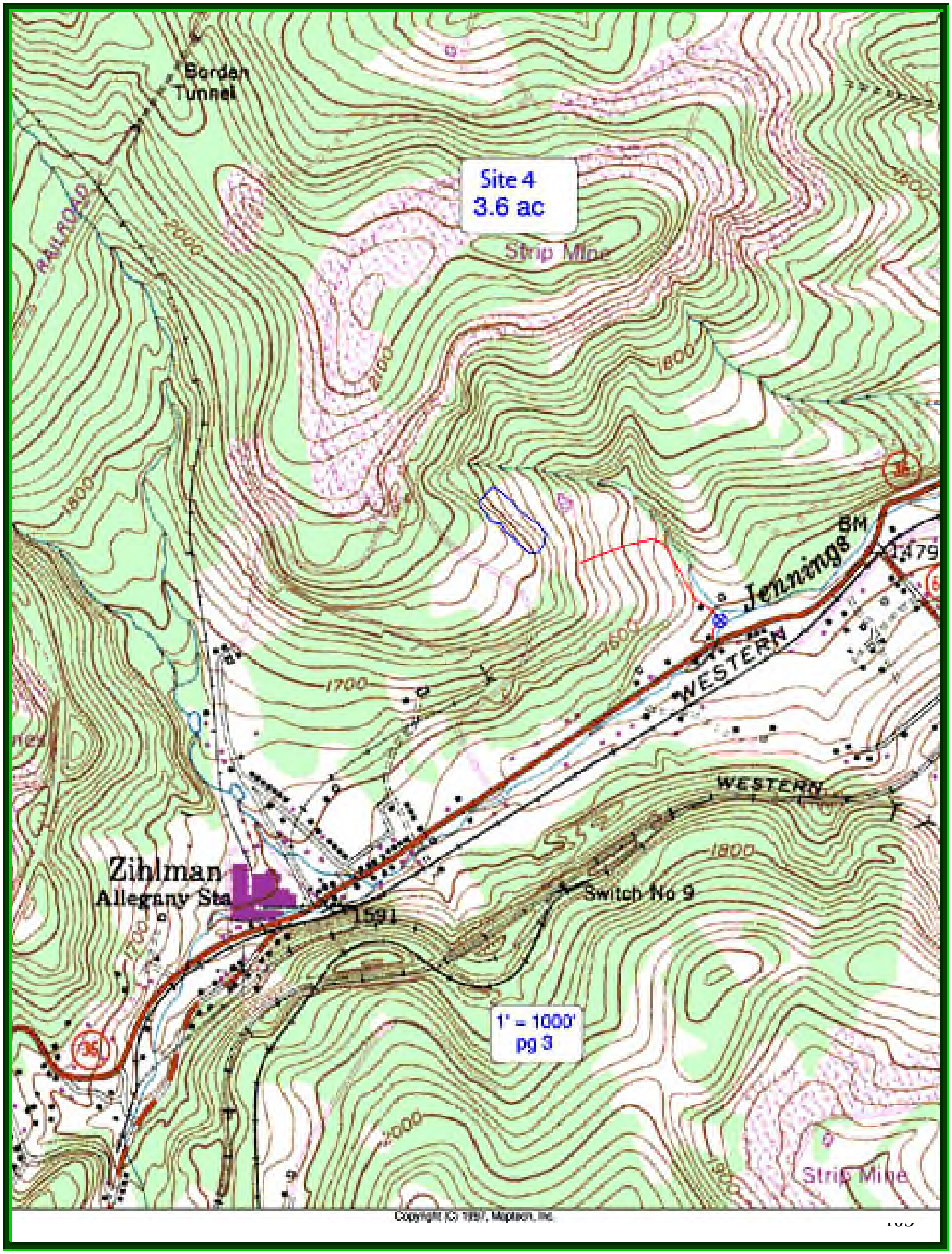
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots is 77.5%. Interfering vegetation occupies 50% of plot one and includes multiflora rose, garlic mustard, and bush honeysuckle (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Interference on plot two is approximately 10%. Interfering species may become a serious problem if not treated before opening the canopy and allowing any more light into the stand.

The weighted average for established regeneration for the two plots is 5.25. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R.Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9" for the harvest area is 1.9 cords per acre.

A summary table for regeneration and pulpwood is on page 106.


Borden Tunnel
Site 4
3.6 ac
Strip Mine
RAILROAD
2000
1800
2100
1700
1600
BM
1479
Jennings
WESTERN
WESTERN
1800
Zihlman
Allegany Sta
1591
Switch No 9
1' = 1000'
pg 3
2000
Strip Mine
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Stand and Stock Table

Doyle

Site 4 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	51	64	393	106	335	600	1030	818	0	**3397**
	UGS	119	256	189	1521	708	200	0	480	0	**3473**
RM	AGS	70	116	48	144	100	0	0	0	0	**478**
	UGS	70	29	96	72	100	135	0	0	0	**502**
SM	AGS	210	435	309	72	164	0	0	0	0	**1190**
	UGS	350	203	302	72	0	0	0	0	0	**927**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	1232	841	440	210	0	0	0	0	0	**2723**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0						**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	29	124	166	164	0	0	0	0	**497**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Norway Maple	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	94	0	0	0	0	0	**94**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	331	615	750	322	599	600	1030	818	0	5065
	UGS	1785	1358	1151	2135	972	335	0	480	0	8216
		2116	**1973**	**1901**	**2457**	**1571**	**935**	**1030**	**1298**	**0**	**13281**

Stand and Stock Table

International ¼

Site 4 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	120	120	655	156	458	762	1267	960	0	**4498**
	UGS	280	480	313	2209	956	254	0	570	0	**5062**
RM	AGS	180	224	78	212	136	0	0	0	0	**830**
	UGS	180	56	156	106	136	171	0	0	0	**805**
SM	AGS	540	840	525	106	233	0	0	0	0	**2244**
	UGS	900	392	495	106	0	0	0	0	0	**1893**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	3168	1624	732	323	0	0	0	0	0	**5847**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	56	210	249	233	0	0	0	0	**784**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Norway Maple	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	143	0	0	0	0	0	**143**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	4564	2608	1906	3136	1325	425	0	570	0	14534
	UGS	840	1184	1258	474	827	762	1267	960	0	7572
		5404	**3792**	**3164**	**3610**	**2152**	**1187**	**1267**	**1530**	**0**	**22106**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 4 **Pre-harvest** Date: 10/26/2006

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	75	-	-	50	x	4	-	bh,gm,mr	180
Plot 2	M	80	-	-	10	-	6.5	-		130

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
BL	5		1
BL	6		2
BL	8		1
BC	5	1	2
BC	6	2	2
BC	8	1	
RM	6	1	1
Ash	6		1

Plot A

Species	[1] 2"–1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot B

Species	[1] 2"–1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
SM	3				8
Elm	3				
BC	2				

Plot 2

Species	DBH	AGS	UGS
Sm	8	1	
BL	5		1
BL	7		1
BL	8		1
RM	6		1

Plot C

Species	[1] 2"–1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	2				2

Plot D

Species	[1] 2"–1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	1 1				1 1

Post-Harvest Evaluation

Site 4 Tract

3.6 acres

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Site 4 was harvested during the winter of 2007. The post-harvest fieldwork was conducted in August 2007. The area harvested comprises approximately 3.6 acres. A 1:1000 topographic map of the harvest area is located on page 110.

The post-harvest condition of the road into the area was passable by two wheel drive vehicles. Very minor rutting of the road surface was observed. Rutting appeared to be caused by pickup truck travel through soupy mud on top of a hard road surface. The landing was smooth and vegetated. Soil compaction was measured using a penetrometer with a ½" head. In general, plant roots penetrate soils with readings of 200 psi or less fairly easily. Root penetration is moderate at 200 to 300 psi, and poor at levels above 300 psi. At the time of the fieldwork soils throughout the area were dry. Penetrometer readings on the access road and the landing area were in excess of 300 psi in the first 3 inches. The soil in the harvest area is too stony to measure penetration. No soil compaction was evident.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. Post-harvest results are as follows: Stand volume was reduced overall by 83%. This lot was very nearly clear cut. There were a few trees left in the cutover area and approximately 0.75 acres was left un- marked on the far end near the line. Total percentage of AGS increased from 24% pre-harvest to 57% post-harvest. Species composition of the residual stand shifted from cherry 43%, locust 26% sugar maple 19% pre-harvest to sugar maple 44%, cherry,22%, red maple 20% post-harvest. The average diameter of the residual stand decreased. Stand and stock tables in both Doyle and International Rules can be found on pages 111 and 113.

Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

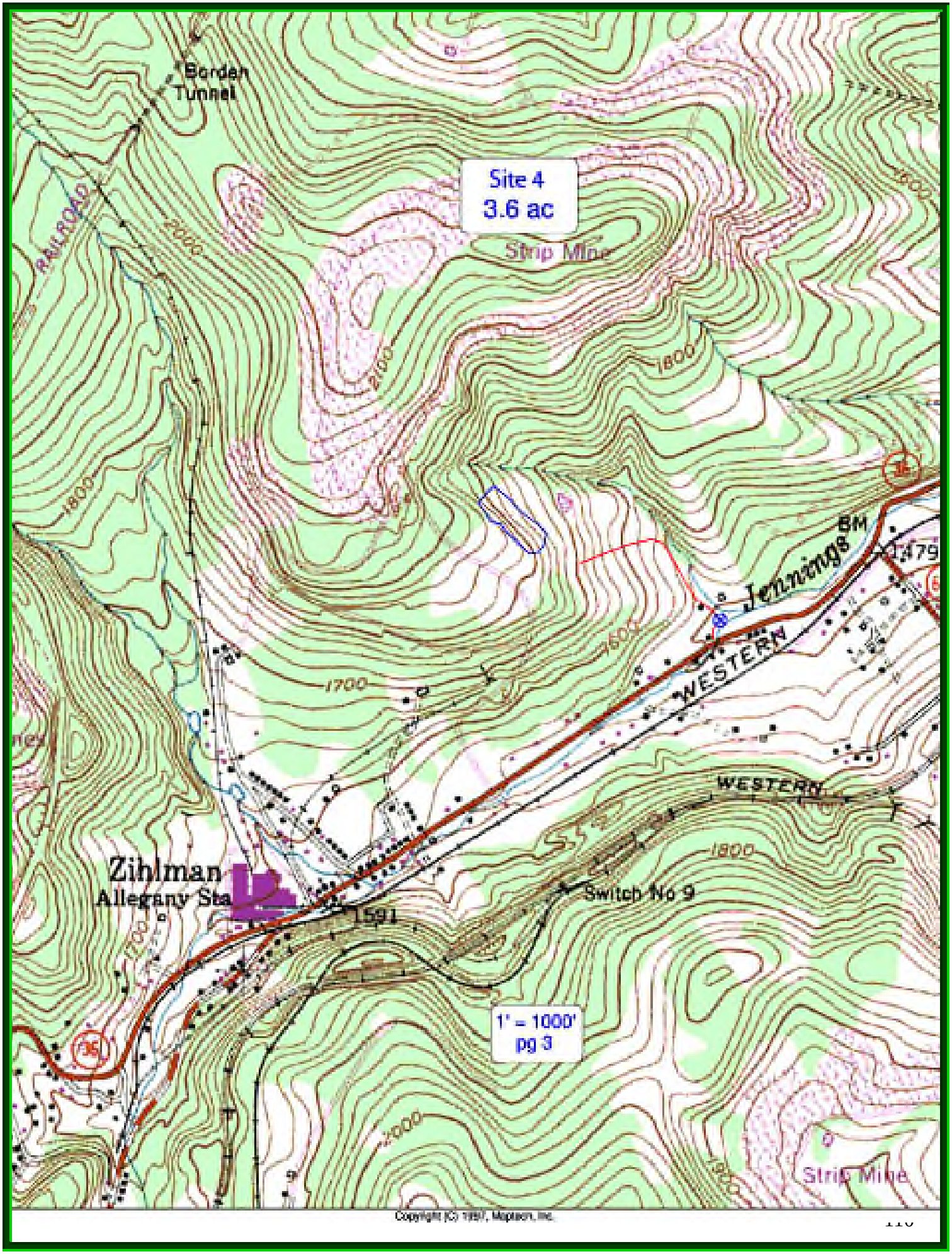
The average canopy density for the sample plots was 50%. Competing vegetation from grasses is a potential problem in one of the sample plots (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). This plot was not adequately stocked while the other was covered with cherry seedlings.

The weighted average for established regeneration for the two plots is 66.25. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment

Station. The average cordwood volume for trees 5"-9.9" for the harvest area based on the two sample points is 1.26 cords per acre. A summary table for regeneration and pulpwood is on page 113.

Pre and post-harvest photos of the tract can be found on page 114.


Borden Tunnel
Site 4
3.6 ac
Strip Mine
RAILROAD
1800
2100
1700
1600
BM
1479
Jennings
WESTERN
Zihlman
Allegany Sta
1591
Switch No 9
1' = 1000'
pg 3
Strip Mine
Copyright (C) 1997, Maptech, Inc.

Stand and Stock Table

Doyle

Site 4 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	0	32	53	106	0	0	0	0	0	**191**
	UGS	51	32	137	106	0	0	0	0	0	**326**
RM	AGS	56	58	0	94	0	0	0	0	0	**208**
	UGS	42	0	75	94	0	0	0	0	0	**211**
SM	AGS	84	232	330	232	132	0	0	0	0	**1010**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	140	29	48	0	0	0	0	0	0	**217**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	29	0	0	0	0	0	0	0	**29**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbea	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	233	90	260	200	0	0	0	0	0	783
	UGS	140	322	383	432	132	0	0	0	0	1409
		373	**412**	**643**	**632**	**132**	**0**	**0**	**0**	**0**	**2192**

Stand and Stock Table

International ¼

Site 4 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ro	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hic	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Chry	AGS	0	60	85	156	0	0	0	0	0	**301**
	UGS	120	60	229	156	0	0	0	0	0	**565**
RM	AGS	144	112	0	143	0	0	0	0	0	**399**
	UGS	108	0	132	143	0	0	0	0	0	**383**
SM	AGS	216	448	549	360	184	0	0	0	0	**1757**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	360	56	78	0	0	0	0	0	0	**494**
Bass	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	56	0	0	0	0	0	0	0	**56**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Butternut	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hornbeam	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	588	172	439	299	0	0	0	0	0	1498
	UGS	360	620	634	659	184	0	0	0	0	2457
		948	**792**	**1073**	**958**	**184**	**0**	**0**	**0**	**0**	**3955**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 4 Post-harvest Date: 8/15/2007

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	40		30		y	17.5	n		60
Plot 2	M	60				n	115	y		50

Pulpwood 37.24' **Regeneration 3.72'**

Plot

Species	DBH	AGS	UGS
BL	8	1	
RM	5		1
	6		2
	8		1

Plot

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	11				13
BL	1				
Ash	1				

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BL		2			22
BC	13	2			
Hick	1				

Plot 2

Species	DBH	AGS	UGS
HM	5		3
	6	4	
BL	5		3
BC			1

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BC	100				103
BL		1			
Hick	1				

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BL	1				127
BC	125				
Ash	1				

Appendix

Pre-harvest

Typical stand view

Post-harvest

Typical stand views

Cherry regeneration

Pre-Harvest Evaluation

Site 5 Tract

7.16 acres

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Site 5 located in Allegany County, Maryland approximately 2 miles west of the town of Mount Savage on Dutch Hollow Road.

The harvest area contains 7.16 acres and is bounded to the west and by a property line, to the east and south by roads, and the north by old fields. The boundaries are marked with blue paint. The property is located on the Frostburg quadrangle. The sheet was created in 1949 and revised in 1981. The stand is made up of primarily even-aged sawtimber size trees. There are a few older remnant trees scattered through the stand. The topography is gently sloping to sloping and the soils are stony.

Vehicle access to the property is a hard stone drive that runs along the southern property line. The road is shown in red on the map on page 119. Landing areas are located along this road.

Soil compaction was not measured on the landing areas or the woods due to the stoniness of the soils.

GPS coordinates for the access road and Dutch Hollow Road are 39º 41 ’33.46” N and 78º 54’ 32.97” W. The harvest area was mapped using a hand held GPS unit. A 1:1000 topographic map of the harvest area is located on page 119.

The soil in the harvest area is mapped as Gilpin very stony silt loam 10-30% slopes. These soils are moderately deep, well drained and nearly level to very steep. These soils are limited in their use by stoniness and hazard of erosion. Native vegetation is primarily mixed upland hardwood.

A 100% inventory of all trees 10”DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. The three most common species by Int ¼ “ volume are sugar maple 23%, hickory 17%, and black locust 15%. The average DBH for AGS trees was 13.3” and for UGS 12.7”. Tree form and grade are typical for the area. A Summary and Stand and stock tables in both Doyle and International Rules can be found on pages 120, 121 and 122.

Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

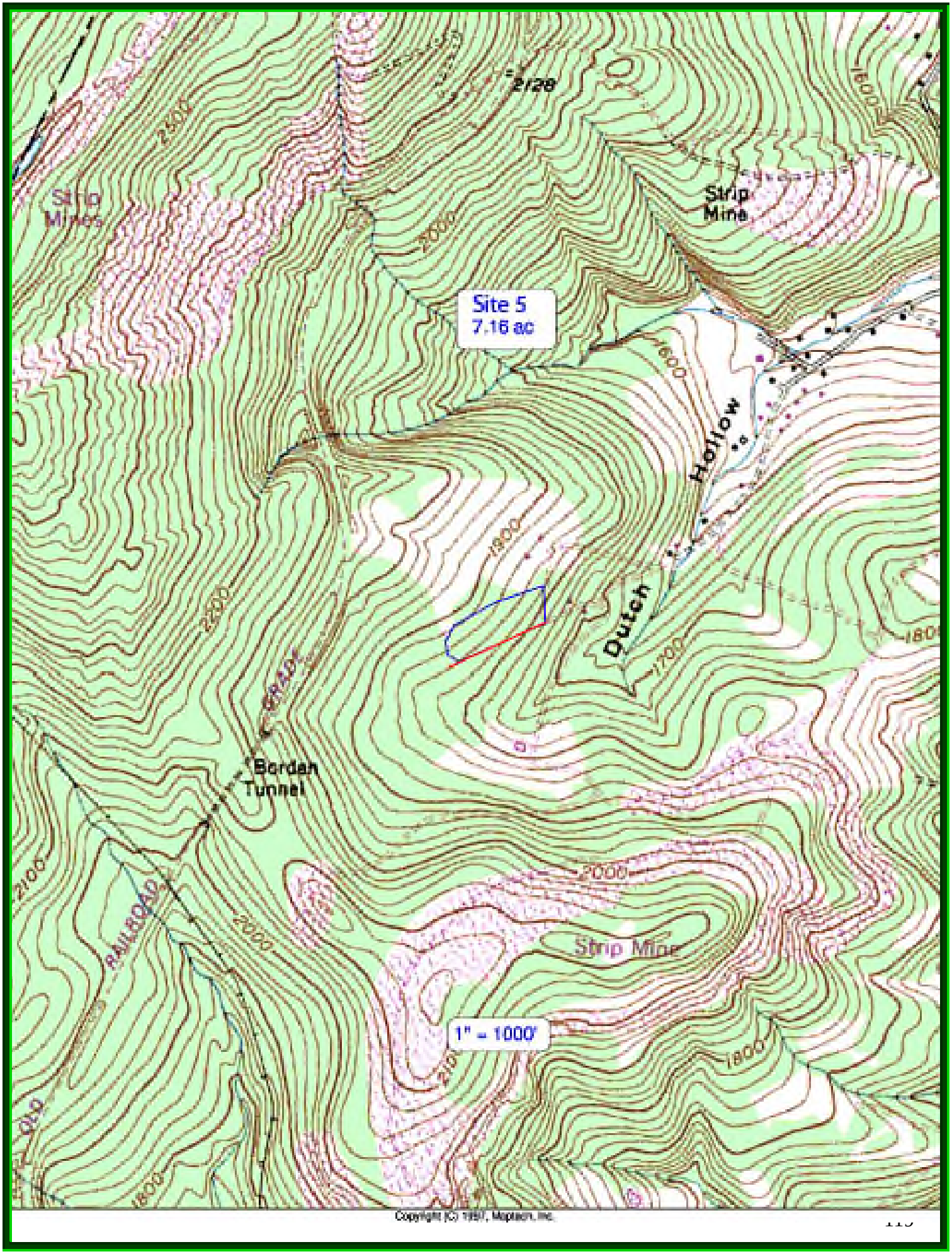
The average canopy density for the sample plots was 85%. Interfering vegetation occupies 60% of plot one and includes spice bush, garlic mustard, and multiflora rose, (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Interference on plot two is approximately 50%. Interfering species may become a

serious problem if not treated before opening the canopy and allowing any more light into the stand.

The weighted average for established regeneration for the two plots is 2.75. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2”-1’ (1), 1’-3’ (2), 3’-5’ (20), 5’+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5”-9.9” on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5”-9.9” for the harvest area is 1.6 cords per acre.

A summary table for regeneration and pulpwood is on page 123.



Summary

Site 5 5/1/2007

	AGS			UGS			TOTAL VOL (AGS & UGS)	
	no. trees	Doyle vol	Int ¼ vol	no. trees	Doyle vol	Int ¼ vol	Doyle	Int ¼
Pop	2	116	204	6	1258	1649	1374	1853
RO/BO	19	1816	2646	4	218	362	2034	3008
Hic	63	4019	6303	28	1159	1981	5178	8284
CO	2	193	289	2	425	581	618	870
WO	9	1115	1652	7	113	272	1228	1924
Chry	1	32	60	0	0	0	32	60
RM	13	377	723	8	243	461	620	1184
SM	89	4267	7291	71	1927	3794	6194	11085
Locust	0	0	0	46	4998	4358	4998	7358
Bass	2	380	548	0	0	0	380	548
Ash	11	883	1365	28	2266	3238	3149	3646
ELM	0	0	0	52	2078	3646	2078	3646
Beech	0	0	0	5	85	200	85	200
Butternut	1	48	78	0	0	0	48	78
Hackberry	1	48	78	0	0	0	48	78
B Gum	2	264	369	0	0	0	264	369
Wal	0	0	0	11	1497	2087	1497	2087
Pin Ch	0	0	0	0	0	0	0	0
	215	**13558**	**21606**	**268**	**16267**	**25629**	**29825**	**47235**
	45%				**55%**			
		13.3” Ave DBH AGS			**12.7” Ave DBH UGS**			

Stand and Stock Table

Doyle

Site 5 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	32	84	0	0	0	0	0	0	**116**
	UGS	0	0	136	131	186	0	325	480	0	**1258**
RO/BO	AGS	42	116	254	348	328	0	295	433	0	**1816**
	UGS	14	0	110	94	0	0	0	0	0	**218**
Hic	AGS	224	609	748	816	0	585	234	803	0	**4019**
	UGS	140	348	158	72	0	441	0	0	0	**1159**
CO	AGS	0	29	0	0	164	0	0	0	0	**193**
	UGS	0	0	0	0	164	261	0	0	0	**425**
WO	AGS	0	29	124	116	846	0	0	0	0	**1115**
	UGS	84	29	0	0	0	0	0	0	0	**113**
Chry	AGS	0	32	0	0	0	0	0	0	0	**32**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RM	AGS	84	87	206	0	0	0	0	0	0	**377**
	UGS	56	29	158	0	0	0	0	0	0	**243**
SM	AGS	434	696	1020	1078	814	225	0	0	0	**4267**
	UGS	700	261	288	514	164	0	0	0	0	**1927**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	98	203	740	922	1278	450	688	0	619	**4998**
Bass	AGS	0	0	0	0	380	0	0	0	0	**380**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	14	58	322	0	264	225	0	0	0	**883**
	UGS	84	145	631	304	0	0	0	0	1102	**2266**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	280	645	357	94	0	702	0	0	0	**2078**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	56	29	0	0	0	0	0	0	0	**85**
Butternut	AGS	0	0	48	0	0	0	0	0	0	**48**
	UGS0	0	0	0	0	0	0	0	0	0	**0**
Hackberry	AGS	0	0	48	0	0	0	0	0	0	**48**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	264	0	0	0	0	**264**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Wal	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	58	206	0	0	1233	0	0	0	**1497**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	1526	1805	3106	2131	2056	3312	1013	480	1721	13558
	UGS	798	1688	2854	2358	3060	1035	529	1236	0	16267
		2310	**3435**	**5638**	**4489**	**4852**	**4122**	**1542**	**1716**	**1721**	**29825**

Stand and Stock Table

International ¼

Site 5 Pre-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	60	144	0	0	0	0	0	0	**204**
	UGS	0	0	228	197	256	0	398	570	0	**1649**
RO/BO	AGS	108	224	417	540	466	0	368	523	0	**2646**
	UGS	36	0	183	143	0	0	0	0	0	**362**
Hic	AGS	576	1176	1257	1276	0	764	290	964	0	**6303**
	UGS	360	672	261	106	0	582	0	0	0	**1981**
CO	AGS	0	56	0	0	233	0	0	0	0	**289**
	UGS	36	0	0	0	233	348	0	0	0	**581**
WO	AGS	0	56	210	180	1206	0	0	0	0	**1652**
	UGS	216	56	0	0	0	0	0	0	0	**272**
Chry	AGS	0	60	0	0	0	0	0	0	0	**60**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RM	AGS	216	168	339	0	0	0	0	0	0	**723**
	UGS	144	56	261	0	0	0	0	0	0	**461**
SM	AGS	1116	1344	1731	1647	1157	296	0	0	0	**7291**
	UGS	1800	504	468	789	233	0	0	0	0	**3794**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	252	392	1260	1433	1836	592	868	0	725	**7358**
Bass	AGS	0	0	0	0	548	0	0	0	0	**548**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	36	112	552	0	369	296	0	0	0	**1365**
	UGS	216	280	1044	466	0	0	0	0	1232	**3238**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	720	1250	603	143	0	930	0	0	0	**3646**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	144	56	0	0	0	0	0	0	0	**200**
Butternut	AGS	0	0	78	0	0	0	0	0	0	**78**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Hackberry	AGS	0	0	78	0	0	0	0	0	0	**78**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	369	0	0	0	0	**369**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Wal	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	112	339	0	0	1636	0	0	0	**2087**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	2052	3256	4806	3643	4348	1356	658	1487	0	21606
	UGS	3888	3378	4647	3277	2558	4088	1266	570	1957	25629
		5940	**6634**	**9453**	**6920**	**6906**	**5444**	**1924**	**2057**	**1957**	**47235**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 5 Pre-harvest Date: 5/1/2007

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	80			60	Y	1.5	n	SB	60
Plot 2	M	90			50	Y	4	n	SB	100

Pulpwood 37.24' Regeneration 3.72'

Plot 1

Species	DBH	AGS	UGS
HM	6	2	
Hick	5	1	
	7	1	
RO	8	1	

Plot 2

Species	DBH	AGS	UGS
HM	5	1	4
	7	1	1
	8		2
Hick	8		1
Elm	6	1	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
CO	1				3
Hick	1				
BC	1				

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
Ash	3				3

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
Ash	5				5

Post-Harvest Evaluation

Site 5

7.16 acres

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Site 5 was harvested during the summer of 2007. The post-harvest fieldwork was conducted in August 2007. The area harvested comprises approximately 7.16 acres. A 1:1000 topographic map of the harvest area is located on page 126.

The post-harvest condition of the road into the area was passable by two wheel drive vehicles. No damage to the access road surface was observed. The landings were smooth. Soil compaction was not measured due to the extremely stony soil. Visual examination showed little if any soil compaction or rutting.

A 100% inventory of all trees 10"DBH and larger was conducted on the harvest area. Trees were categorized as either acceptable growing stock (AGS) or unacceptable growing stock (UGS). AGS are trees of a desirable species, likely to live at least fifteen years, and that will likely contain at least one grade sawlog. Post-harvest results are as follows: Stand volume was reduced overall by 34% on Int ¼" rule. Total percentage of AGS increased from 44% pre-harvest to 59% post-harvest. Species composition of the residual stand shifted from sugar maple 23%, hickory 17%, locust 15% pre-harvest to sugar maple 28%, hickory 22%, locust 7% post-harvest. The average diameter of AGS in the residual stand increased from 13.3" to 13.5". Summary and Stand and Stock tables in both Doyle and International Rules can be found on pages 127, 128 and 129.

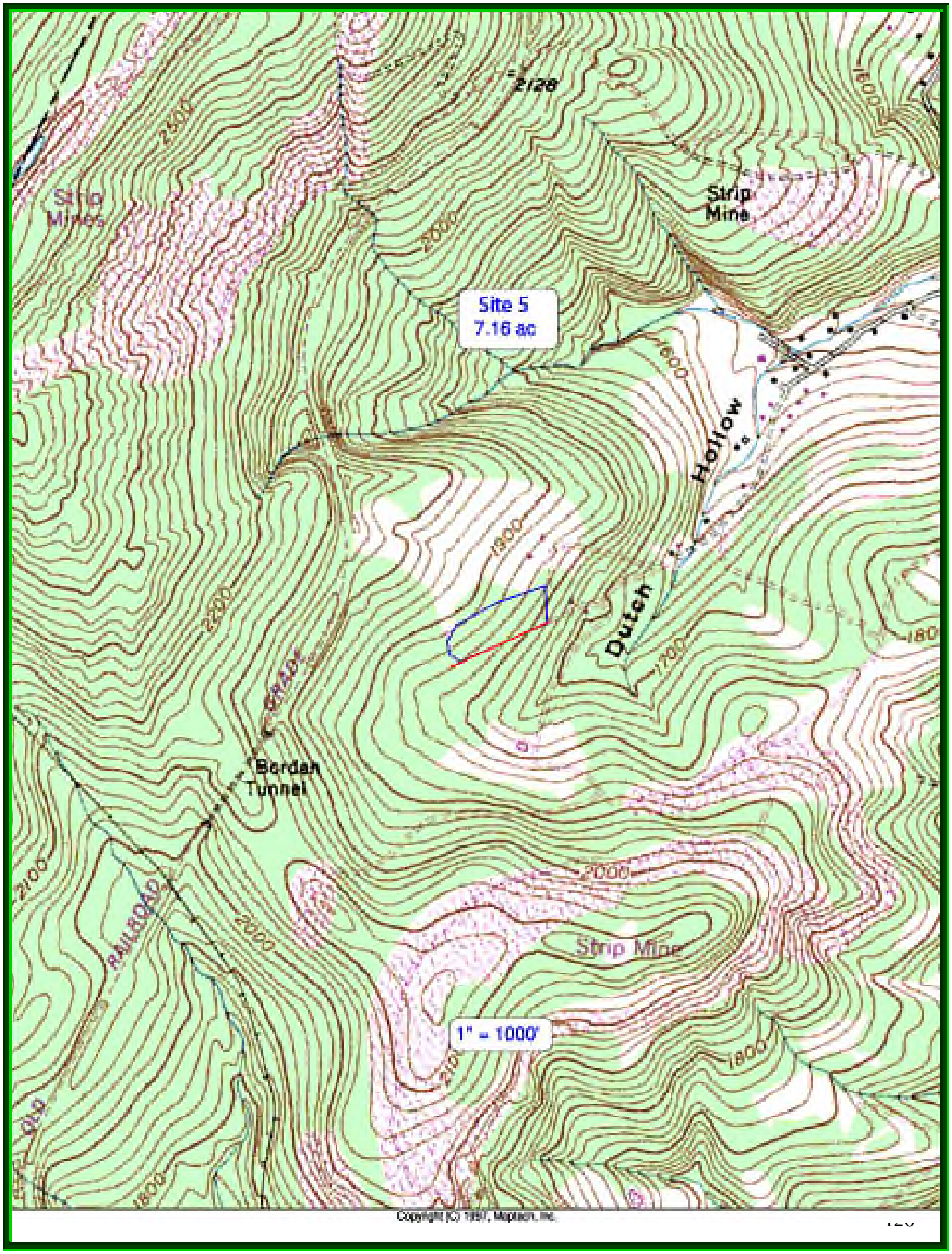
Two 1/10-acre plots were established to sample regeneration and pulpwood volume. Impact from deer, canopy density, the amount of interfering and competing vegetation, established regeneration, and total basal area were also tallied.

The average canopy density for the sample plots was 77.5%. Competing vegetation is a potential problem on both of the sample plots. Interfering vegetation occupies 30% of plot one and 30% of plot two. Competing species include spice bush, garlic mustard, and multiflora rose (competing vegetation is considered to be a problem when it exceeds 30% of the sample area). Only one of the sample plots had adequate regeneration while the other did not.

The weighted average for established regeneration for the two plots is 13.5. Plots are considered adequately stocked under moderate pressure from deer, if they contain a weighted count of 25 or higher. Seedlings are weighted as follows 2"-1' (1), 1'-3' (2), 3'-5' (20), 5'+ (50).

The pulpwood component of the stand was estimated using a 100% inventory of all trees 5"-9.9" on each of the two plots. The volume in cords per acre was estimated using pulpwood tables created by S.R. Geworkiantz 1945, Lake States Forest Experiment Station. The average cordwood volume for trees 5"-9.9" for the harvest area based on the two sample points is 1.79 cords per acre. A summary table for regeneration and pulpwood is on page 130.

Pre and post-harvest photos of the tract can be found on page 131.


Site 5
7.16 ac
Strip Mine
Strip Mine
Dutch Hollow
Borden Tunnel
Strip Mine
1" = 1000'
Copyright (C) 1997, Maptech, Inc.

Summary

Site 5 8/15/2007

	AGS			UGS			TOTAL VOL (AGS & UGS)	
	no. trees	Doyle vol	Int ¼ vol	no. trees	Doyle vol	Int ¼ vol	Doyle	Int ¼
Pop	2	100	174	0	0	0	100	174
RO	13	1086	1620	4	219	355	1305	1975
Hic	51	3058	4808	23	1447	2210	4505	7018
Asp	0	0	0	0	0	0	0	0
WO	7	1014	1468	4	56	144	1070	1612
Chry	0	0	0	0	0	0	0	0
RM	14	629	1066	4	138	255	767	1321
SM	75	3851	6456	40	1307	2399	5158	8855
Locust	0	0	0	11	1630	2281	1630	2281
Bass	4	1114	1394	0	0	0	1114	1394
Ash	11	724	1184	8	380	631	1104	1815
ELM	0	0	0	14	959	1488	959	1488
Beech	0	0	0	2	43	92	43	92
Blk Walnut	3	783	1044	9	834	1194	1617	2238
Hackberry	2	77	134	0	0	0	77	134
B Gum	0	0	0	5	551	779	551	779
Birch	0	0	0	0	0	0	0	0
Pin Ch	0	0	0	0	0	0	0	0
	182	**12436**	**19348**	**124**	**7564**	**11828**	**20000**	**31176**

59% **41%**

13.5" Ave DBH AGS **13.0" Ave DBH UGS**

Stand and Stock Table

Doyle

Site 5 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	32	68	0	0	0	0	0	0	**100**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RO	AGS	42	58	220	232	164	0	0	370	0	**1086**
	UGS	0	29	96	94	0	0	0	0	0	**219**
Hic	AGS	196	464	556	624	190	225	0	803	0	**3058**
	UGS	140	116	144	188	264	225	0	370	0	**1447**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	48	94	872	0	0	0	0	**1014**
	UGS	56	0	0	0	0	0	0	0	0	**56**
Chry	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RM	AGS	42	145	206	72	164	0	0	0	0	**629**
	UGS	28	0	110	0	0	0	0	0	0	**138**
SM	AGS	392	319	1133	994	788	225	0	0	0	**3851**
	UGS	294	348	240	0	164	261	0	0	0	**1307**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	110	358	328	450	0	370	0	**1630**
Bass	AGS	0	0	75	0	164	225	0	0	650	**1114**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	87	357	116	164	0	0	0	0	**724**
	UGS	42	0	206	0	132	0	0	0	0	**380**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	70	58	96	188	322	225	0	0	0	**959**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	29	0	0	0	0	0	0	0	**43**
BlkWalnut	AGS	0	0	0	0	0	783	0	0	0	**783**
	UGS0	0	0	240	144	0	450	0	0	0	**834**
Hackberry	AGS	0	29	48	0	0	0	0	0	0	**77**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	14	0	48	0	264	225	0	0	0	**551**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	672	1134	2711	2132	2506	1458	0	1173	650	12436
	UGS	672	580	1290	972	1474	1836	0	740	0	7564
		1344	**1714**	**4001**	**3104**	**3980**	**3294**	**0**	**1913**	**650**	**20000**

Stand and Stock Table

International ¼

Site 5 Post-harvest

Volume by Diameter Class

		10	12	14	16	18	20	22	24	26+	Total
Pop	AGS	0	60	114	0	0	0	0	0	0	**174**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ro	AGS	108	112	366	180	360	233	0	441	0	**1620**
	UGS	0	56	156	143	0	0	0	0	0	**355**
Hic	AGS	504	896	912	962	274	296	0	964	0	**4808**
	UGS	360	224	234	286	369	296	0	441	0	**2210**
Asp	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
WO	AGS	0	0	78	143	1247	0	0	0	0	**1468**
	UGS	144	0	0	0	0	0	0	0	0	**144**
Chry	AGS	0	860	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
RM	AGS	108	280	339	106	233	0	0	0	0	**1066**
	UGS	72	0	183	0	0	0	0	0	0	**255**
SM	AGS	1008	616	1881	1539	1116	296	0	0	0	**6456**
	UGS	756	672	390	0	233	348	0	0	0	**2399**
Locust	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	183	563	466	592	0	441	0	**2281**
Bass	AGS	0	0	132	0	233	296	0	0	733	**1394**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Ash	AGS	0	168	603	180	233	0	0	0	0	**1184**
	UGS	108	0	339	0	184	0	0	0	0	**631**
ELM	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	180	112	156	286	458	296	0	0	0	**1488**
Beech	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	56	0	0	0	0	0	0	0	**92**
Blk Walnut	AGS	0	0	0	0	0	1044	0	0	0	**1044**
	UGS	0	0	390	212	0	592	0	0	0	**1194**
Hackberry	AGS	0	56	78	0	0	0	0	0	0	**134**
	UGS	0	0	0	0	0	0	0	0	0	**0**
B Gum	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	36	0	78	0	369	296	0	0	0	**779**
Birch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Pin Ch	AGS	0	0	0	0	0	0	0	0	0	**0**
	UGS	0	0	0	0	0	0	0	0	0	**0**
Total	AGS	1728	2188	4503	3290	3569	1932	0	1405	733	19348
	UGS	1728	1120	2109	1490	2079	2420	0	882	0	11828
		3456	**3308**	**6612**	**4780**	**5648**	**4352**	**0**	**2287**	**733**	**31176**

WWI Pulpwood & Regeneration Tally Sheet

Tract: Site 5 Post-harvest Date: 8/15/2007

	deer impact l/h	canopy density %	fern %	grass/ sedges %	woody plants %	inter-ference >30%	Ave weighted regen.	regen. adequate [25+]	interfering species	Total BA
Plot 1	M	80	-	-	30	x	2	no	sp bush	130
Plot 2	M	75	-	-	30	x	25	yes	sp bush	120

Pulpwood 37.24 **Regeneration 3.72**

Plot 1

Species	DBH	AGS	UGS
HM	5	2	1
	6	2	1
	7	1	
	9	2	

Plot 2

Species	DBH	AGS	UGS
HM	6	1	1
	8	2	
	9	1	
Hick	5	1	1
Ash	5	1	

Plot A

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BL	2				3
CO	1				

Plot B

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
BL	1				1

Plot C

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
Ash				1	50

Plot D

Species	[1] 2"-1'	[2] 1'-3'	[20] 3'-5'	[50] 5'+	Weighted Ave
					0

Appendix

Pre-harvest

Typical road and stand view

First logs

Post-harvest

Road and landing

Stand view from landing