The Effects of Logging on Understory Plants
2007 Survey

by

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INTRODUCTION

Anishinaabe bands that signed the Treaties of 1836, 1837, 1842, and 1854 retain hunting, fishing, and gathering rights within lands ceded to the U.S. Government. These lands include present-day northern Michigan, Wisconsin, and Minnesota (Figure 1). The natural resources found on these ceded lands continue to play an important role in the Anishinaabe lifeway by providing food, medicine, utility supplies and ceremonial items. Plants, in particular, serve many different functions and remain inextricably woven into Anishinaabe culture (Meeker et al. 1994).

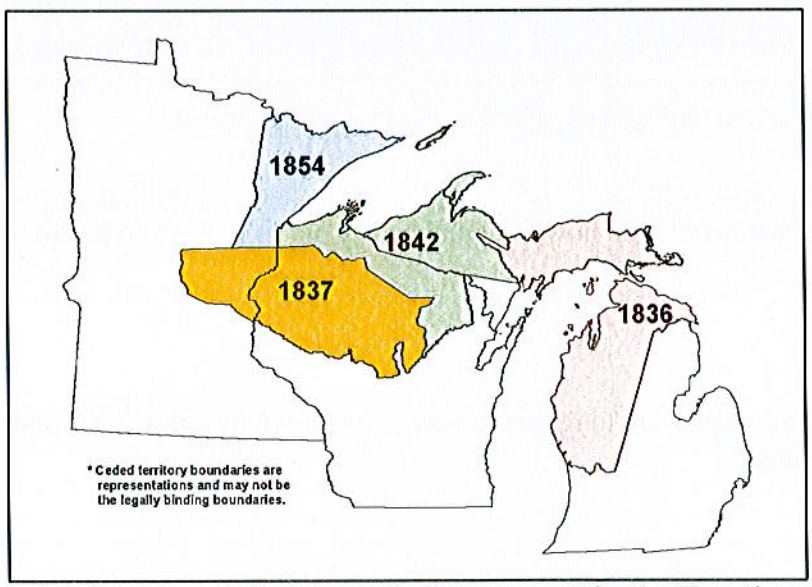

Figure 1: Territories ceded to the U.S. Government in the Treaties of 1836, 1837, 1842 and 1854

Many of these plant species occur within northern hardwood forests and have adapted to the environmental conditions existing under tree canopies. These "understory" plants often begin their seasonal growth during early spring while sunlight filters down through the still leafless deciduous trees. After the trees form a dense canopy of leaves, understory plants either set seed and wilt or continue growing under low light levels. Though canopy gaps form naturally by windthrow or individual tree mortality, commercial logging creates gaps to which understory plants may not be adapted.

Scientists have raised concerns regarding the impact of logging on understory plants and have emphasized the need for extensive research (Crow et al. 1994). Several studies have documented some of these impacts, such as an overall decline in understory species richness and

cover, while simultaneously showing an increase in non-native species (Metzger and Schultz 1981, Whitney and Foster 1988, Duffy and Meier 1992, Bratton et al. 1994, Crow et al. 1994). These studies, however, have been limited to comparative observations of logged verses un-logged sites and have been criticized for failing to distinguish logging impacts from pre-existing site differences (Johnson et al. 1993). Subsequently, scientists and other interested individuals have emphasized the need to conduct studies that document site conditions both before and after logging treatments. Furthermore, many of these previous studies focused on sites that had experienced clear-cut logging techniques rather than the selective-cut logging techniques that are currently most often prescribed in hardwood forests.

In response, staff from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) proposed a long-term study to be initiated before logging activities (specifically using selective-cut techniques) in order to address the need to document pre-existing site conditions unrelated to logging impacts. The USDA Forest Service recognized the merit of assessing selective-cut logging impacts to understory plants and agreed to work with GLIFWC staff to develop and implement this study on the Chequamegon-Nicolet National Forest.

The goal of this study is twofold: 1) to document selective-cut logging impacts to understory plants; and 2) to document if and how long understory plants recover to pre-logging conditions.

Report Objective

The objectives of this report are to report of survey work conducted in 2007 and summarize the data that were gathered.

METHODS

Study Sites

Four study sites, all with similar characteristics, were selected within northern hardwood stands on the Medford-Park Falls Ranger District of the Chequamegon-Nicolet National Forest (Figure 2). They all have a history of logging, but have had minimal disturbance since the 1920's. Their vegetation composition has been classified as Acer-Hydrophyllum habitat types (Kotar 1988), with the dominant tree species: sugar maple[1], basswood, bitternut hickory, white ash and green ash (Table 1). Though all the sites have silty loam soils, one site (site 1) has the moderate to well drained soils associated with ice-walled lakes, while the remaining sites (sites 2-4) have the poor to moderate drained soils associated with ground moraines (Attig 1993, Keys Jr. et al. 1995).

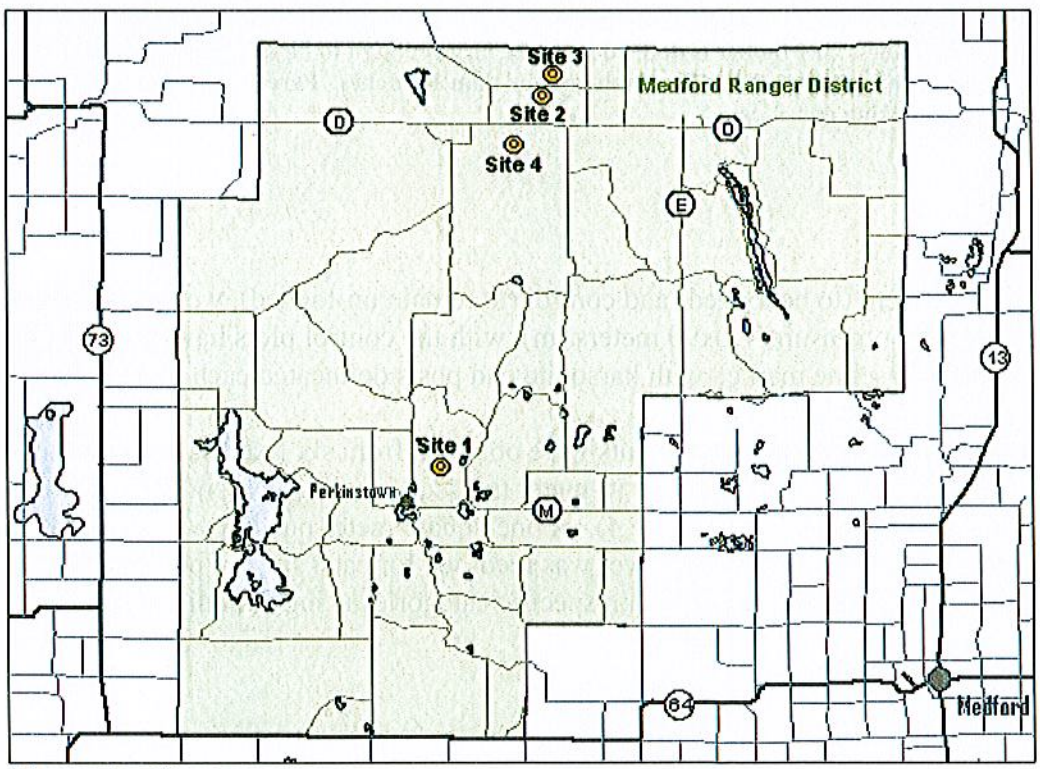

Figure 2: Site Locations

[1] Ojibwe and scientific names are listed in Appendix A

Table 1: Plot descriptions, Chequamegon-Nicolet National Forest Timber Information Management Database.

	Site 1	Site 2	Site 3	Site 4
Compartment number	118	49	51	48
Stand number	2	1	9	8
Stand area (acres)	93	86	62	140
Year of origin	1922	1914	1927	1926
Year of field survey	2003	1990	1990	1990
Forest type	Sugar maple - basswood	Sugar maple	Sugar maple - basswood	Sugar maple
Size-density class*	Sawtimber (≥ 70%)	Sawtimber (≥ 70%)	Sawtimber (≥ 70%)	Sawtimber (≥ 70%)
Basal area (sq ft/acre)	121	110	110	110
Average dbh (inches)	14	12	12	11

*** Size-density class was calculated by the Forest Service using average dbh (diameter at breast height) and basal area values. Sawtimber is defined as a tree large enough to be sawed into lumber; for hardwoods, this means a tree with a dbh greater than 11 inches. Percentage values in parentheses represent stocking densities.**

Study Design

Paired plots, treatment (to be logged) and control (to remain un-logged), were established at each study site. Each plot measured 50x90 meters (m), with the control plots having a 10 m buffer on all sides. A 90 m baseline marked with karsonite end posts delineated each plot (Figure 3).

Within each plot, data for understory plants were obtained from six fixed sampling points placed at random distances along each of seven 50-meter transects running perpendicular to the baseline at 0, 15, 30, 45, 60, 75, and 90 m (Figure 4). A one-square meter quadrat was placed at each sampling point, within which percent cover was recorded for each species present (Bonham 1989). Percent cover was estimated within specific categories using a modified Braun-Blauquet Scale:

<< 1%
< 1%
1-5 %
6-25 %
26-50 %
51-75 %
76-100 %

Figure 3: Site 1, Control Plot

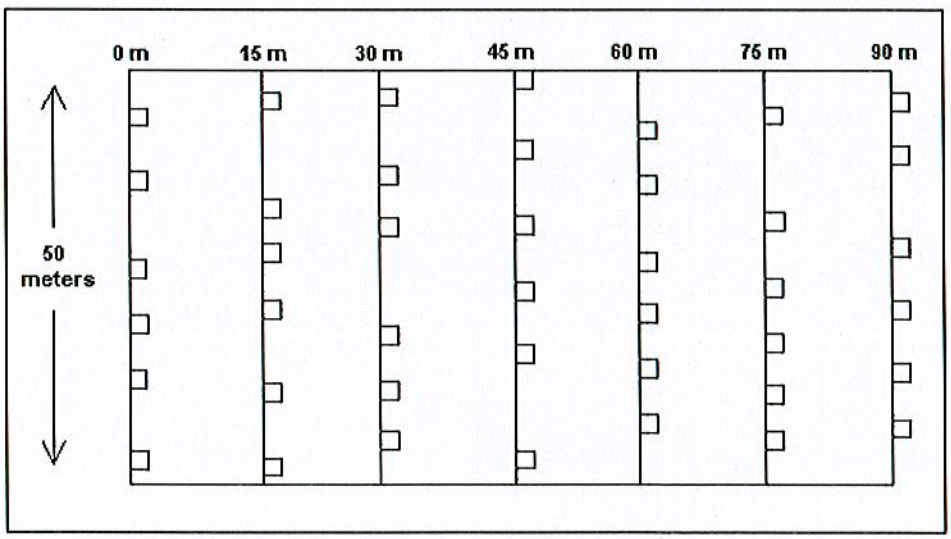

Figure 4: Plot Design - seven transects, measuring 50 meters each, were laid out every 15 meters along a 90-meter baseline. Data were collected within six randomly placed square-meter quadrats along each transect.

Treatment Activities

Treatment activities have been completed for all four sites (Table 2). These activities entailed selective logging with trees being hand felled, cut into logs and removed from the site by a forwarder (Figures 5 and 6).

Table 2: Treatment Schedule

Site	Date of Treatment
1	Winter 2002-2003
2	Winter 2003-2004
3	Winter 2005-2006
4	Summer 2005

Figure 5: Site 1, treatment plot
Forwarder removing logs

Figure 6: Site 1, treatment plot
Post-treatment conditions

At site 1, approximately 930 trees were felled, with the majority being basswood, sugar maple, and white ash (Figure 7). At site 2, approximately 240 trees were felled, the majority being white ash, sugar maple, and red maple. At site 3, approximately 95 trees were felled, the majority being red maple. At site 4, approximately 590 trees were felled, the majority being sugar maple and red maple.

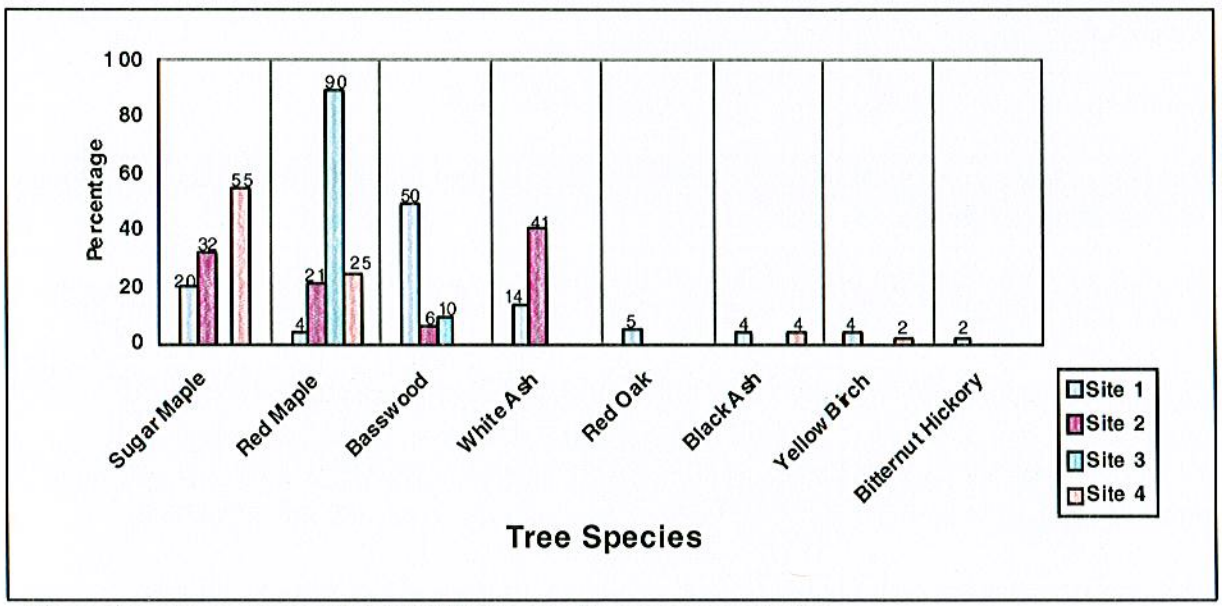

Figure 7: Percentage of total felled trees by species and site

2007 Survey Work

During 2007, all sites were surveyed twice (spring and summer). Site 1 was sampled on May 24-25 and August 1-2. Site 2 was sampled on June 4-5 and August 7-8. Site 3 was sampled on June 5-6 and August 6-7. Site 4 was sampled on May 21-22 and July 30-31.

Data Summarization

Data were entered and summarized between May and July 2008.

Species richness (number of species) was calculated and graphed for each plot for each sampling period (spring and summer).

Species composition was characterized through frequency, mean percent cover and importance values for each plot for each sampling period. Frequency was calculated for each species by dividing the number of quadrats in which the species occurred by the total number of quadrats in each plot (42 quadrats), then multiplied by 100. Mean percent cover for each species was calculated by averaging the percent cover of that species over all the quadrats in which that species occurred in each plot. Because percent cover data were recorded using modified Braun-Blauquet categories, midpoint values for each of the categories were used for calculations.

The importance value for each species was calculated as the sum of that species' relative frequency and relative cover (modified by Cox 1976). Relative frequency for each species was calculated by dividing that species' frequency by the total sum of all the species' frequencies, then multiplied by 100. Relative cover for each species was calculated by dividing that species' mean percent cover by the total sum of all the species' percent cover, and then multiplied by 100.

RESULTS

Species Richness

During pre-treatment sampling, a total of 110 plant species were recorded within the sites (Appendix A).

Species richness ranged from a low of 40 species to a high of 63 species (Table 3, Figures 8 and 9). The lowest species richness occurred during the summer at the control plot at site 1 and the highest species richness occurred during the spring at the treatment plot at site 2.

Table 3: Species richness (number of species) by plot

	Site 1		Site 2		Site 3		Site 4	
	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment
Spring	42	53	58	63	59	61	45	49
Summer	40	52	59	52	61	58	51	59

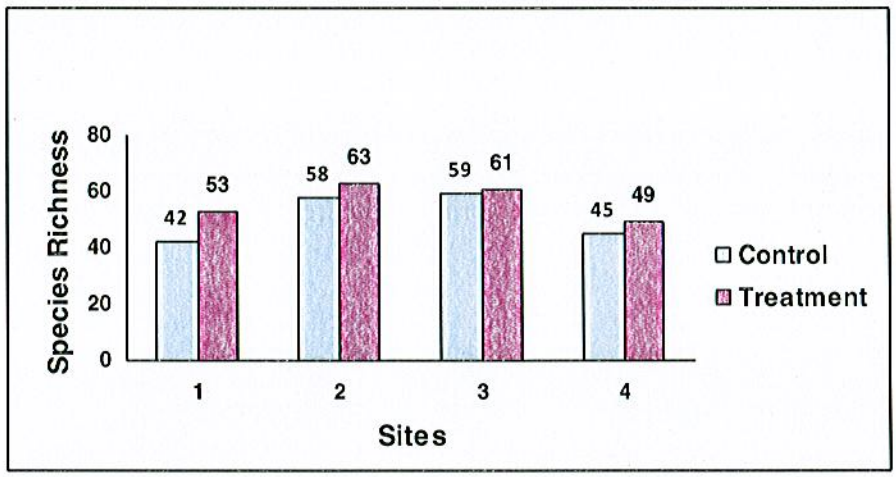

Figure 8: Species richness for the 2007 spring sampling period.

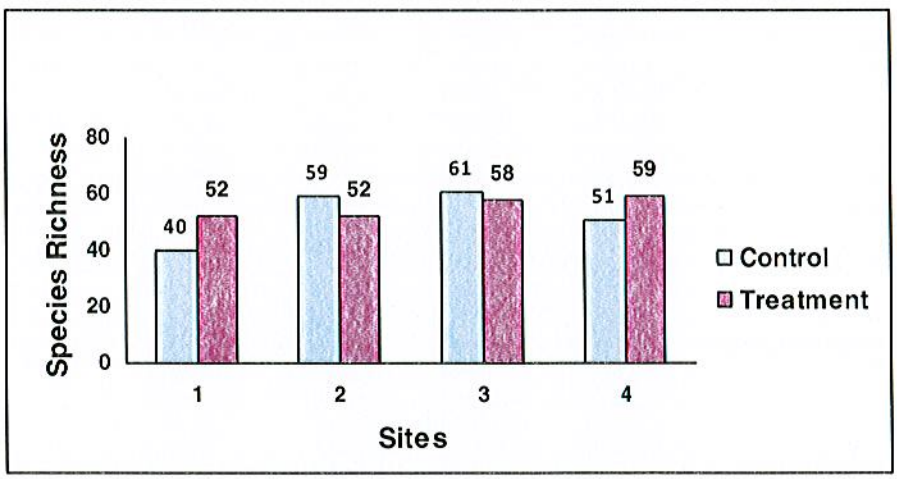

Figure 9: Species richness for the 2007 summer sampling period.

Species Composition

Importance values were calculated to determine the overall status of a species within each plot. The control plot at site 1 showed a number of ephemeral forbs with high importance values during the spring sampling period (Table 4). In particular, spring beauty, wood anemone, wild leek and yellow trout lily had high importance values in spring, but not summer. Forbs that showed high importance values for both spring and summer included blue cohosh, fragrant bedstraw, Virginia waterleaf, Pennsylvania sedge and sharp-lobed hepatica. Ash seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values in the summer, but not spring, included currant, false melic grass, long-stalk sedge and wood fern.

The treatment plot at site 1 also showed a number of ephemeral forbs with high importance values during spring (Table 5). Spring beauty, wild leek and yellow trout lily had high importance values only in the spring. Forbs that showed high importance values for both spring and summer included enchanter's nightshade, fragrant bedstraw, lady fern, maidenhair fern, Virginia waterleaf and sharp-lobed hepatica. Ash seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included blue cohosh, hog peanut and Wood's stiff sedge.

For the control plot at site 2, species that had high importance values only in the spring included big white trillium, jewelweed, spring beauty, yellow trout lily and wood anemone (Table 6). Forbs that showed high importance values for both spring and summer included common enchanter's nightshade, lady fern, and Wood's stiff sedge. Ash and red maple seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included hairy wood sedge, long-stalk sedge, musclewood (seedlings), Pennsylvania sedge and sharp-lobed hepatica.

For the treatment plot at site 2, species that had high importance values only in the spring included big white trillium, maidenhair fern, spring beauty, wood anemone and yellow trout lily (Table 7). Forbs that showed high importance values for both spring and summer included jewelweed, Pennsylvania sedge and Wood's stiff sedge. Ash and red maple seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included basswood (seedlings) brownish sedge, common enchanter's nightshade, ironwood (seedlings) and sugar maple (seedlings).

For the control plot at site 3, species that had high importance values only in the spring included big white trillium, jewelweed, prickly wild gooseberry (currant) and wood anemone (Table 8). Forbs that showed high importance values for both spring and summer included interrupted fern, Pennsylvania sedge and raspberry species. Ash, red maple and sugar maple seedlings also had

high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included musclewood (seedlings), sharp-lobed hepatica, starflower and Wood's stiff sedge.

For the treatment plot at site 3, species that had high importance values only in the spring included big white trillium, prickly wild gooseberry (currant), sharp-lobed hepatica, spring beauty and wood anemone (Table 9). Forbs that showed high importance values for both spring and summer included jewelweed and lady fern. Ash, red maple and sugar maple seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included currant species, raspberry species, musclewood (seedlings), Pennsylvania sedge and speckled alder (seedlings).

For the control plot at site 4, species that had high importance values only in the spring included spring beauty, Virginia waterleaf, wild leek, wood anemone, yellow trout lily (Table 10). Forbs that showed high importance values for both spring and summer included maidenhair fern, sharp-lobed hepatica, stinging nettle, two-leaved miterwort and Wood's stiff sedge. Species that showed high importance values only in the summer included brownish sedge, fragrant bedstraw, hog peanut, lady fern and red maple (seedlings).

For the treatment plot at site 4, species that had high importance values only in the spring included spring beauty, wild leek, wood anemone and yellow trout lily (Table 11). Forbs that showed high importance values for both spring and summer included jewelweed, sharp-lobed hepatica, stinging nettle and Virginia waterleaf. Ash and sugar maple seedlings also had high importance values for both the spring and summer sampling periods. Species that showed high importance values only in the summer included fringed bindweed, Pennsylvania sedge, red maple (seedlings) and rough-leaved rice grass.

Table 4: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the control plot at site 1.

Site 1 – Control Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Spring beauty	15.4	100.0	12.1	Hepatica, sharp-lobed	19.4	95.2	8.5
Hepatica, sharp-lobed	13.6	90.5	9.9	Bedstraw, fragrant	16.0	50.0	14.6
Virginia waterleaf	13.5	66.7	17.0	Virginia waterleaf	15.6	69.1	8.7
Leek, wild	13.5	26.2	29.2	Sedge, Pennsylvania	13.2	16.7	18.6
Sedge, Pennsylvania	11.2	11.9	27.2	Ash sp. (seedlings)	12.9	66.7	4.8
Trout lily, yellow	9.8	66.7	6.9	Current sp.	11.3	19.1	14.5
Anemone, wood	9.8	64.3	7.4	Sedge, long-stalk	10.1	9.5	15.0
Ash sp. (seedlings)	8.7	64.3	4.5	Grass, false melic	9.4	4.8	15.0
Bedstraw, fragrant	8.4	42.9	10.2	Cohosh, blue	9.0	28.6	8.0
Cohosh, blue	7.8	21.4	14.9	Fern, wood sp.	8.0	9.5	11.4

Table 5: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the treatment plot at site 1.

Site 1 – Treatment Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Fern, maidenhair	21.4	2.4	88.0	Fern, maidenhair	25.2	2.4	88.0
Leek, wild	16.7	28.6	58.5	Bedstraw, fragrant	17.2	97.6	24.2
Virginia waterleaf	16.5	92.9	33.4	Virginia waterleaf	12.3	83.3	12.2
Bedstraw, fragrant	11.3	83.3	15.3	Ash sp. (seedlings)	11.5	88.1	7.8
Spring beauty	10.7	88.1	11.1	Hog peanut	10.4	57.1	15.3
Ash sp. (seedlings)	9.4	81.0	8.5	Hepatica, sharp-lobed	8.9	64.3	7.4
Hepatica, sharp-lobed	8.5	73.8	7.5	Enchanter's nightshade, common	7.4	57.1	4.9
Trout lily, yellow	8.2	78.6	4.3	Fern, lady	6.0	9.5	17.8
Fern, lady	7.4	9.5	27.0	Sedge, Wood's stiff	5.4	19.1	12.0
Enchanter's nightshade sp.	5.6	50.0	4.3	Cohosh, blue	4.9	16.7	11.2

Table 6: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the control plot at site 2.

Site 2 – Control Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Jewelweed	14.5	83.3	28.6	Sedge, Wood's stiff	18.0	64.3	34.6
Ash sp. (seedlings)	11.6	88.1	12.2	Ash sp. (seedlings)	15.9	97.6	10.8
Sedge, Wood's stiff	11.1	57.1	24.9	Maple, red (seedlings)	11.1	78.6	2.6
Anemone, wood	7.8	54.8	10.3	Fern, lady	7.1	7.1	22.7
Maple, red (seedlings)	7.6	69.1	2.7	Sedge, hairy wood	7.0	7.1	22.1
Trillium, big white	6.7	45.2	10.1	Sedge, Pennsylvania	6.9	23.8	13.5
Enchanter's nightshade, common	6.7	45.2	9.8	Musclewood (seedlings)	6.4	14.3	16.4
Spring beauty	6.6	57.1	3.6	Enchanter's nightshade, common	6.4	33.3	7.1
Fern, lady	6.0	4.8	26.5	Hepatica, sharp-lobed	6.2	28.6	8.8
Trout lily, yellow	6.0	47.6	5.4	Sedge, long-stalk	5.8	19.1	12.0

Table 7: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the treatment plot at site 2.

Site 2 – Treatment Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Fern, maidenhair	13.5	2.4	88.0	Sedge, Wood's stiff	16.6	54.8	43.8
Jewelweed	12.1	69.1	32.3	Maple, red (seedlings)	13.5	88.1	3.3
Sedge, Wood's stiff	10.9	61.9	28.7	Ash sp. (seedlings)	12.5	76.2	7.1
Sedge, Pennsylvania	9.7	40.5	36.2	Sedge, Pennsylvania	10.7	38.1	26.1
Ash sp. (seedlings)	9.0	76.2	6.5	Ironwood (seedlings)	8.7	23.8	26.6
Maple, red (seedlings)	7.8	69.1	3.3	Maple, sugar (seedlings)	8.4	47.6	7.7
Spring beauty	7.4	59.5	7.3	Sedge, brownish	8.4	4.8	39.0
Trillium, big white	7.3	59.5	6.6	Basswood (seedlings)	7.9	2.4	38.0
Anemone, wood	6.6	54.8	5.8	Enchanter's nightshade, common	7.2	33.3	12.1
Trout lily, yellow	6.3	45.2	9.9	Jewelweed	6.2	9.5	24.3

Table 8: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the control plot at site 3.

Site 3 – Control Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Fern, interrupted	15.8	2.4	88.0	Fern, interrupted	17.0	2.4	88.0
Jewelweed	10.6	83.3	18.2	Ash sp. (seedlings)	11.5	92.9	9.6
Ash sp. (seedlings)	9.2	85.7	8.9	Maple, red (seedlings)	10.7	95.2	3.8
Maple, red (seedlings)	9.1	95.2	3.8	Sedge, Wood's stiff	9.7	14.3	42.9
Currant, prickly wild gooseberry	7.6	7.1	39.3	Maple, sugar (seedlings)	7.9	54.8	11.4
Maple, sugar (seedlings)	6.6	54.8	9.7	Raspberry sp.	7.6	52.4	11.0
Anemone, wood	6.4	54.8	8.6	Starflower	6.2	50.0	5.2
Sedge, Pennsylvania	6.1	38.1	15.4	Musclewood (seedlings)	6.2	14.3	24.5
Raspberry sp.	6.0	40.5	13.5	Sedge, Pennsylvania	5.8	42.9	7.1
Trillium, big white	5.9	52.4	6.9	Hepatica, sharp-lobed	5.5	35.7	9.3

Table 9: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the treatment plot at site 3.

Site 3 – Treatment Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Jewelweed	15.0	83.3	44.5	Ash sp. (seedlings)	12.9	95.2	9.8
Ash sp. (seedlings)	10.4	92.9	9.4	Maple, sugar (seedlings)	12.7	88.1	12.5
Maple, red (seedlings)	10.1	97.6	4.2	Maple, red (seedlings)	12.3	97.6	6.2
Maple, sugar (seedlings)	8.9	76.2	10.0	Jewelweed	11.4	64.3	18.4
Currant, prickly wild gooseberry	8.5	4.8	51.5	Fern, lady	10.5	7.1	43.0
Anemone, wood	7.8	61.9	11.7	Raspberry sp.	9.1	31.0	25.1
Trillium, big white	6.3	50.0	9.4	Alder, speckled (seedlings)	8.9	2.4	38.0
Hepatica, sharp-lobed	6.2	33.3	19.0	Sedge, Pennsylvania	6.8	38.1	11.0
Fern, lady	5.1	9.5	26.5	Currant sp.	6.4	11.9	22.2
Spring beauty	4.8	42.9	4.6	Musclewood (seedlings)	6.2	23.8	15.8

Table 10: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the control plot at site 4.

Site 4 – Control Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Nettle, stinging	14.1	52.4	31.1	Nettle, stinging	18.1	54.8	38.8
Spring beauty	12.9	92.9	12.5	Fern, maidenhair	15.3	7.1	54.7
Sedge, Wood's stiff	12.0	61.9	20.4	Sedge, Wood's stiff	13.0	57.1	17.7
Trout lily, yellow	11.7	92.9	8.5	Hepatica, sharp-lobed	11.1	66.7	4.9
Anemone, wood	9.4	71.4	7.8	Hog peanut	10.2	2.4	38.0
Leek, wild	9.4	31.0	22.0	Sedge, brownish	10.2	2.4	38.0
Hepatica, sharp-lobed	8.9	61.9	9.4	Mitrewort, two-leaved	6.9	35.7	6.2
Virginia waterleaf	7.8	50.0	9.9	Bedstraw, fragrant	6.7	31.0	8.3
Fern, maidenhair	7.5	11.9	22.2	Fern, lady	6.5	21.4	12.9
Mitrewort, two-leaved	6.9	47.6	7.4	Maple, red (seedlings)	6.0	38.1	1.5

Table 11: Importance value (IV), frequency (F) and mean percent cover (MC) for the species with the ten highest importance values calculated for the treatment plot at site 4.

Site 4 – Treatment Plot							
Spring				Summer			
Species	IV	F	MC	Species	IV	F	MC
Spring beauty	14.7	95.2	13.5	Bindweed, fringed	23.3	2.4	88.0
Trout lily, yellow	13.4	92.9	10.1	Nettle, stinging	14.1	64.3	25.0
Leek, wild	12.5	50.0	22.7	Maple, red (seedlings)	11.1	85.7	4.2
Nettle, stinging	11.3	52.4	17.9	Hepatica, sharp-lobed	8.6	54.8	8.3
Jewelweed	10.6	47.6	17.2	Virginia waterleaf	8.1	47.6	9.6
Maple, sugar (seedlings)	10.5	85.7	3.2	Ash sp. (seedlings)	8.0	57.1	4.9
Hepatica, sharp-lobed	9.2	59.5	8.3	Grass, rough-leaved rice	7.5	4.8	26.5
Virginia waterleaf	9.0	45.2	13.1	Jewelweed	7.3	38.1	10.9
Anemone, wood	8.7	54.8	8.7	Sedge, Pennsylvania	7.0	23.8	16.1
Ash sp. (seedlings)	8.4	61.9	4.9	Maple, sugar (seedlings)	6.6	47.6	3.9

SUMMARY

Treatments, entailing selective logging, had been completed at all the study sites by 2006. Post-treatment sampling occurred twice (spring and summer) at all the study sites in 2007. Data entry and analysis was completed in 2008.

Summarization of the data showed that there were a total of 110 species in all plots combined. Species richness within each plot ranged from 40 to 63 species, with the least occurring at the control plot at site 1 during the summer and the most occurring at the treatment plot at site 2 during the spring.

The species composition at all plots showed importance values for spring ephemerals decreasing in the summer. During the summer, grass and sedge species showed higher importance values. Ash seedlings had high importance values during both the spring and summer sampling periods for all plots except the control plot at site 4.

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APPENDIX A
2007 SPECIES LIST

2007 Species List

English Name	Scientific Name	Ojibwe Name	Origin
American burn-weed	Erechtites hieracifolia	not known	Native
Ash species	Fraxinus sp.		
Aster species	Aster sp.		
Avens species	Geum sp.		
Baneberry species	Actea sp.		
Basswood	Tilia americana	wiigobaatig	Native
Bedstraw, fragrant	Gallum triflorum	not known	Native
Bellwort, large-flowered	Uvularia grandiflora	waabishkijiibik	Native
Bellwort, sessile-leaved	Uvularia sessifolia		Native
Bindweed, fringed	Polygonum cilinode	not known	Native
Bloodroot	Sanguinaria canadensis	miskojiibik	Native
Breeches species	Dicentra sp.		
Buttercup, hooked	Ranunculus recurvatus	not known	Native
Buttercup, small flowered	Ranunculus abortivus	not known	Native
Canada mayflower	Maianthemum canadense	agongosimin	Native
Canadian clearweed	Pilea pumila	not known	Native
Cherry species	Prunus sp.		
Cohosh, blue	Caulophyllum thalictroides	bezhigojiibik	Native
Currant species	Ribes sp.		
Currant, prickly wild gooseberry	Ribes cynosbati	not known	Native
Currant, wild black	Ribes americanum	amikomin	Native
Dandelion	Taraxacum officinale	doodooshaaboojiibik	Non-native
Dogwood, alternate-leaved	Cornus alternifolia	moozomizh	Native
Elm, American	Ulmus americana	aniib	Native
Enchanter's night-shade species	Circaea sp.	not known	Native
Enchanter's night-shade, alpine	Circaea alpina	not known	Native
Enchanter's night-shade, common	Circaea leutitiana	not known	Native
False Solomon's seal	Smilacina racemosa	agongosiwijiibik	Native
Fern, beech	Thelypteris phegopteris	not known	Native
Fern, interrupted	Osmunda claytoniana	not known	Native
Fern, lady	Athyrium filix-femina	a'sawan	Native
Fern, maidenhair	Adiantum pedatum	not known	Native
Fern, silvery spleenwort	Deparia achrostichoides	not known	Native
Fern, unknown species	Unknown fern species		
Fern, wood glandular	Dryopteris intermedia	not known	Native
Fern, wood species	Dryopteris sp.		
Fern, wood toothed	Dryopteris carthusiana	not known	Native
Fringed loosestrife	Lysimachia ciliata	not known	Native
Ginseng, dwarf	Panax trifolius	nesoobagak	Native
Goldenrod species	Solidago sp.		
Goldenrod, zig-zag	Solidago flexicaulis	ajidamoowaanow	Native
Grass, American millet	Milium effusum	not known	Native
Grass, bottle-brush	Hystrix patula	not known	Native
Grass, false melic	Schizachne purpurascens		Native
Grass, fringed brome	Bromus ciliatus	not known	Native
Grass, groved blue	Poa alsodes	not known	Native
Grass, long-awned wood	Brachyelytrum erectum	not known	Native
Grass, nodding fesque	Festuca obtusa	not known	Native
Grass, rough-leaved rice	Oryzopsis asperifolia	not known	Native
Grass, unknown grass species	Unknown grass species		
Grass, wood reed species	Cinna sp.		
Grass, woodland blue	Poa saltuensis	not known	Native
Hawkweed species	Hieracium sp.		
Hazelnut, beaked	Corylus cornuta	bagaaniminzh	Native
Hepatica, sharp-lobed	Hepatica acutiloba	animozid	Native
Hickory, bitternut	Carya cordiformis	not known	Native

2007 Species List

English Name	Scientific Name	Ojibwe Name	Origin
Hog peanut	Amphicarpaea bracteata	bagwaji-miskodiisimin	Native
Honeysuckle, American fly	Lonicera canadensis	ozaawaaskined	Native
Ironwood	Ostrya virginiana	maananoons	Native
Jack-in-the-pulpit	Arisaema triphyllum	zhaashaagomin	Native
Jewelweed	Impatiens capensis	ozaawashkojiibik	Native
Leek, wild	Allium tricoccum	bagwaji-zhi/agaagawanzh	Native
Maple, red	Acer rubrum	zhiishiigimiiwanzh	Native
Maple, sugar	Acer saccharum	aninaatig	Native
Meadow rue, early	Thalictrum dioicum	not known	Native
Mitrewort, two-leaved	Mitella diphylla	not known	Native
Musclewood	Carpinus caroliniana	ski'agoniminzh	Native
Nannyberry	Viburnum lentago	aditeminagaanwanzh	Native
Nettle, false	Laportea canadensis	mazaanaatig	Native
Nettle, hemp	Galeopsis tetrahit	not known	Non-native
Nettle, stinging	Urtica dioica	mazaan	Native
Oak. Red	Quercus rubra	mitigomizh	Native
Partridge berry	Mitchella repens	binewimin	Native
Phlox. Blue	Phlox divaricata	not known	Native
Poison ivy	Toxicodendron radicans	animikiibag	Native
Raspberry species	Rubus sp.		
Sedge, bladder	Carex intumescens	not known	Native
Sedge, brome-like	Carex bromoides	not known	Native
Sedge, brownish	Carex brunnescens	not known	Native
Sedge, curly-styled wood	Carex rosea	not known	Native
Sedge, Dewey's	Carex deweyana	not known	Native
Sedge, graceful	Carex gracillima	not known	Native
Sedge, hairy wood	Carex hirtifolia	not known	Native
Sedge, inland star	Carex interior	not known	Native
Sedge, long-stalk	Carex pedunculata	not known	Native
Sedge, nerveless woodland	Carex leptonervia	not known	Native
Sedge, Pennsylvania	Carex pensylvanica	not known	Native
Sedge, plantain-leaved	Carex plantaginea	not known	Native
Sedge, Wood's stiff	Carex woodii	not known	Native
Smilax, cat briar	Smilax herbacea	manito minanganwinz	Native
Solomon's seal	Polygonatum pubescens	naaniibide'oodegin	Native
Sorel, tall wood	Oxalis stricta	not known	Native
Spring beauty	Claytonia virginica	meeautikwaeaugpineeg	Native
Starflower	Trientalis borealis	not known	Native
Strawberry, woodland	Fragaria vesca	ode'imin	Native
Sweet cicely	Osmorhiza claytonii	ozagadigom	Native
Thistle, bull	Cirsium vulgare	(gi)chi-mazaanashk	Non-native
Toothwort, cut-leaved	Cardamine laciniata	aemaushtaunishaessiwung	Native
Trillium, big white	Trillium grandiflorum	baushkindjibgwaun	Native
Trout lily, yellow	Erythronium americanum	numaegbugoneen	Native
Unknown species	Unknown species		
Violet species	Viola sp.		Native
Violet, Canadian	Viola canadensis		Native
Violet, downy yellow	Viola pubescens	ogitebagoons	Native
Virginia creeper	Parthenocissus quinquefolia	bebaamooded manidoo-biimaakwad	Native
Virginia waterleaf	Hydrophyllum virginianum	nebanaanikweyaag	Native
White lettuce	Prenanthes alba	doodooshaaboojiibik	Native
Wild sarsaparilla	Aralia nudicaulis	waaboozojiibik	Native
Wood anenome	Anemone quinquefolia	not known	Native
Wood rush, hairy	Luzula acuminata	not known	Native