

DFW Post-Harvest Flora
Phillipston WMA, Phillipston Massachusetts
Date of survey: 9/15/09 and 9/22/09
Surveyed by DFW Staff
Location of lot(s): West of Williamsville Road

General Description and Setting

Two stands (ST-1 and ST-2) were harvested, with an un-harvested area containing a vernal pool/wetland maintained between the two stands (see Forest Cutting Plan Summary at: http://www.mass.gov/dfwele/dfw/habitat/management/bdi/forest_mgt/forest_cutting_plans.htm). Woody vegetation response after harvest differs slightly between ST-1 and ST-2. In ST-1, pin cherry is the dominate regenerating tree species throughout most of the stand. In ST-2, oak from stump sprouts and advanced seedling reproduction dominate. However, both stands also contain red maple stump sprouts. A dispersed but sparse overstory of retained seed trees still exists (15-20% of the original overstory), consisting mostly of white pine with some red oak and black cherry interspersed. Large shade trees were retained along stone walls and near old building foundations along Williamsville Road.

The harvest area occurs on abandoned agricultural land, with numerous stone walls in both stands. In ST-1, vegetation composition and response to harvest differs between portions of the stand separated by stone walls, which indicates different historical land-use practices within the abandoned fields that now comprise ST-1. On one side of a stone wall in ST-1 is abundant cherry and red maple seedlings, while on the other side of the same wall is more herbaceous vegetation (grasses and forbs) typically associated with abandoned fields. It may be that the area with abundant tree seedlings was abandoned earlier, and accumulated tree seed over time that germinated after the old field white pine was cut. The area with old field herbaceous vegetation may have been abandoned more recently and did not accumulate tree seeds in the soil bank. It also may be that plowing occurred on one side of the wall, but land was only pastured (remained un-plowed) on another side of the wall, which would likely result in persistent effects on future vegetation composition.

Significant Flora and Habitats

The flora is generally comprised of regionally common species. No significant habitats were encountered within the two stands. A productive vernal pool/wetland area persists between ST-1 and ST-2.

Invasive Species

In ST-1, glossy buckthorn (*Frangula alnus*) was found in the herb and shrub layers, and Japanese barberry (*Berberis thunbergii*) was found in a few isolated locations. Oriental bittersweet (*Celastrus orbiculatus*) was located in small, concentrated areas of ST-2. A combination of pulling and cut-stem herbicide treatments will be used to control invasive plants.

Harvest Goals

The abundant regeneration of cherry, oak, and maple with interspersions of herbaceous vegetation and retained overstory trees achieves the harvest goal of regenerating old-field white pine to a structurally diverse two-aged stand dominated by young forest habitat. maple stump sprout standing roughly 10 ft. tall in two growing seasons.

Site Name: Phillipston WMA

Data collected by DFW staff

Timber Sale Contract # : CE-PH-TS1 - Stand 1

Date: 9/15/2009

Cover Classes: + (<1%); 1 (1-5%); 2 (6-25%); 3 (26-50%); 4 (51-75%); 5 (>75%)

Distribution Classes: 1 - growing singly, solitary individuals tend to be scattered through portions or all of the site; 2 - growing in patches or groups in some portion(s) of the site; 3 - growing in patches or groups throughout the site

Scientific Name	Common Name	Herb		Shrub		Overstory	
		Cover	Distribution	Cover	Distribution	Cover	Distribution
<i>Acer pennsylvanicum</i>	striped maple	1	1	2	2		
<i>Acer rubrum</i>	red maple	1	2	3	3		
<i>Acer saccharum</i>	sugar maple					+	2
<i>Amelanchier</i> sp.	shadbush	+	1				
<i>Aralia hispida</i>	bristly sarsaparilla	+	1				
<i>Aralia nudicaulis</i>	wild sarsaparilla	2	2				
<i>Aster acuminatus</i>	aster	+	1				
<i>Berberis thunbergii</i>	Japanese barberry	+	1				
<i>Betula allaganiensis</i>	yellow birch	+	1	+	1		
<i>Betula lenta</i>	sweet birch	+	1	1	1		
<i>Betula papyrifera</i>	paper birch	1	1			+	1
<i>Betula populifolia</i>	gray birch	+	1				
<i>Bidens frondosa</i>	devil's beggartick	+	1				
<i>Carex lurida</i>	shallow sedge	1	2				
<i>Carex swanii</i>	Swan's sedge	+	1				
<i>Comptonia peregrina</i>	sweet fern	+	1				
<i>Coptis trifolia</i>	threeleaf goldthread	+	1				
<i>Cornus alternifolia</i>	alternateleaf dogwood	+	1				
<i>Cornus canadensis</i>	bunchberry dogwood	+	1				
<i>Dennstaedtia punctulobula</i>	eastern hayscented fern	2	2				
<i>Dichanthelium</i> sp.	rosette grass	+	2				
<i>Digitaria sanguinalis</i>	hairy crabgrass	+	1				
<i>Diphasiastrum digitatum</i>	clubmoss	+	1				
<i>Dryopteris intermedia</i>	intermediate woodfern	+	1				
<i>Erechtites hieraciifolia</i>	American burnweed	1	1				
<i>Euthamia graminifolia</i>	flat-top goldentop	+	1				
<i>Fagus grandifolia</i>	American beech	+	1				
<i>Frangula alnus</i>	glossy buckthorn	1	2	+	1		
<i>Fraxinus americana</i>	white ash	+	1			+	1
<i>Hypericum punctatum</i>	spotted St. Johnswort	+	1				
<i>Ilex verticillata</i>	common winterberry	+	1				
<i>Juncus tenuis</i>	poverty rush	+	2				
<i>Lechea intermedia</i>	largepod pinweed	+	1				
<i>Lobelia inflata</i>	Indian-tobacco	+	1				
<i>Lycopodium clavatum</i>	running clubmoss	+	1				
<i>Lycopodium hickeyi</i>	Pennsylvania clubmoss	+	1				
<i>Mitchella repens</i>	partridgeberry	+	1				
<i>Nyssa sylvatica</i>	black gum	+	1			+	2
<i>Osmunda cinnamomea</i>	cinnamon fern	+	1				
<i>Oxalis stricta</i>	common yellow oxalis	+	1				
<i>Pinus strobus</i>	eastern white pine	+	1	+	1	2	1

<i>Polygonum cilinode</i>	fringed black bindweed	2	2				
<i>Populus deltoides</i>	eastern cottonwood	+	1				
<i>Populus grandidentata</i>	bigtooth aspen	+	1				
<i>Populus tremuloides</i>	quaking aspen	+	2				
<i>Potentilla norvegica</i>	Norwegian cinquefoil	+	1				
<i>Potentilla simplex</i>	common cinquefoil	+	1				
<i>Prunus pennsylvanica</i>	pin cherry	1	1	4	3		
<i>Prunus serotina</i>	black cherry	1	3	1	1	1	1
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	western brackenfern	+	1				
<i>Quercus alba</i>	white oak	+	1				
<i>Quercus rubra</i>	northern red oak			+	2	+	1
<i>Quercus velutina</i>	black oak	+	1				
<i>Rhododendron periclymenoides</i>	pink azalea	+	1				
<i>Rhus typhina</i>	staghorn sumac	+	1				
<i>Rubus</i> Cf. <i>allegheniensis</i>	Allegheny blackberry	2	2				
<i>Rubus flagellaris</i>	northern dewberry	1	2				
<i>Rubus idaeus</i>	American red raspberry	+	1				
<i>Rumex acetosella</i>	common sheep sorrel	1	2				
<i>Sambucus racemosa</i>	red elderberry	+	1				
<i>Scirpus validus</i>	soft-stem bullrush	+	2				
<i>Setaria glauca</i>	yellow foxtail	+	1				
<i>Smilacina racemosa</i>	feathery false lily of the valley	+	1				
<i>Solidago rugosa</i>	wrinkleleaf goldenrod	+	1				
<i>Spirea tomentosa</i>	steeplebush	+	1				
<i>Taraxacum officinale</i>	common dandelion	+	1				
<i>Thelypteris noveboracensis</i>	New York fern	+	1				
<i>Trientalis borealis</i>	starflower	+	1				
<i>Trifolium pratense</i>	red clover	+	1				
<i>Tsuga canadensis</i>	eastern hemlock	+	1	1	2		
<i>Vaccinium angustifolium</i>	lowbush blueberry	+	1				
<i>Vaccinium corymbosum</i>	highbush blueberry	+	1				
<i>Viola</i> Cf. <i>blanda</i>	sweet white violet	+	1				
<i>Viola sagittata</i>	arrowleaf violet	+	1				
<i>Vitis labrusca</i>	fox grape	+	1				



DFW Photo by Jonathan McGrath

Figure 1: 5-10 ft. pin cherry, black cherry, red oak, red maple, and striped maple regeneration under eastern white pine residual overstory.



Figure 2: Residual white pine and red oak trees retained at an even distribution throughout Stand 1 where well-formed trees were existed.



Photo taken by Jonathan McGrath

Figure 3: Red oak stump sprout standing roughly 8 ft. tall in two growing seasons.

Site Name: Phillipston WMA

Data collected by DFW Staff

Timber Sale Contract # : CE-PH-TS1 - Stand 2

Date: 9/22/2009

Cover Classes: P (<1%); 1 (1-5%); 2 (6-25%); 3 (26-50%); 4 (51-75%); 5 (>75%)

Distribution Classes: 1 - growing singly, solitary individuals tend to be scattered through portions or all of the site; 2 - growing in patches or groups in some portion(s) of the site; 3 - growing in patches or groups throughout the site

Scientific Name	Common Name	Herb		Shrub		Overstory	
		Cover	Distribution	Cover	Distribution	Cover	Distribution
<i>Acer rubrum</i>	red maple	1	2	1	1	+	1
<i>Ambrosia artemisiifolia</i>	annual ragweed	+	1				
<i>Amelanchier</i> sp.	shadbush	+	1				
<i>Aralia hispida</i>	bristly sarsaparilla	1	1				
<i>Athyrium filix-femina</i>	common ladyfern	+	1				
<i>Betula allaganiensis</i>	yellow birch	+	1	2	3		
<i>Betula lenta</i>	sweet birch	+	1	+	1		
<i>Betula papyrifera</i>	paper birch	+	1				
<i>Betula populifolia</i>	gray birch	+	1			+	1
<i>Carex</i> Cf. <i>scoparia</i>	broom sedge	1	1				
<i>Carex lurida</i>	shallow sedge	+	1				
<i>Castanea dentata</i>	American chestnut	+	1	+	1		
<i>Celastrus orbiculatus</i>	oriental bittersweet	+	1				
<i>Cornus canadensis</i>	bunchberry dogwood	+	1				
<i>Dennstaedtia punctulobula</i>	eastern hayscented fern	1	2				
<i>Dichanthelium</i> sp.	rosette grass	1	1				
<i>Diphasiastrum digitatum</i>	clubmoss	+	1				
<i>Dryopteris intermedia</i>	intermediate woodfern	+	1				
<i>Erechtites hieraciifolia</i>	American burnweed	+	1				
<i>Euthamia graminifolia</i>	flat-top goldentop	+	1				
<i>Fagus grandifolia</i>	American beech	+	1	+	1		
<i>Gaultheria procumbens</i>	eastern teaberry	1	1				
<i>Gnaphalium obtusifolium</i>	sweet everlasting	+	1				
<i>Hypericum perforatum</i>	common St. Johnswort	+	1				
<i>Ilex verticillata</i>	common winterberry	+	1				
<i>Kalmia latifolia</i>	mountain laurel	+	1				
<i>Lechea intermedia</i>	largepod pinweed	+	1				
<i>Lobelia inflata</i>	Indian-tobacco	+	1				
<i>Lycopodium annotinum</i>	stiff clubmoss	+	2				
<i>Lycopodium obscurum</i>	rare clubmoss	+	1				
<i>Lyonia ligustrina</i>	maleberry	+	1	+	1		
<i>Maianthemum canadense</i>	Canada mayflower	1	1				
<i>Medeola virginiana</i>	Indian cucumber	+	2				
<i>Mitchella repens</i>	partridgeberry	+	1				
<i>Nemopanthus mucronatus</i>	mountain holly	+	2				
<i>Nyssa sylvatica</i>	black gum	+	1				
<i>Osmunda cinnamomea</i>	cinnamon fern	+	2				
<i>Osmunda claytoniana</i>	interrupted fern	+	1				
<i>Picea rubens</i>	red spruce	+	1	+	1		
<i>Pinus strobus</i>	eastern white pine	+	1	+	1	2	1
<i>Polygonatum pubescens</i>	hairy Solomon's seal	+	1				

<i>Populus grandidentata</i>	bigtooth aspen	+	1					
<i>Populus tremuloides</i>	quaking aspen	+	2					
<i>Potentilla simplex</i>	common cinquefoil	+	1					
<i>Prunus pennsylvanica</i>	pin cherry	+	1	1	1			
<i>Prunus serotina</i>	black cherry	+	1	P	1	1	1	
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	western brackenfern	+	1					
<i>Pyrola elliptica</i>	waxflower shinleaf	+	2					
<i>Quercus rubra</i>	northern red oak	+	1	1	2	1	1	
<i>Quercus velutina</i>	black oak	+	1					
<i>Rubus</i> Cf. <i>allegheniensis</i>	Allegheny blackberry	1	1					
<i>Rubus flagellaris</i>	northern dewberry	2	1					
<i>Rubus idaeus</i>	American red raspberry	+	1					
<i>Rumex acetosella</i>	common sheep sorrel	+	1					
<i>Scirpus validus</i>	soft-stem bullrush	+	1					
<i>Setaria glauca</i>	yellow foxtail	+	1					
<i>Solidago rugosa</i>	wrinkleleaf goldenrod	+	1					
<i>Thelypteris noveboracensis</i>	New York fern	+	1					
<i>Trientalis borealis</i>	starflower	+	1					
<i>Trifolium repens</i>	white clover	+	1					
<i>Tsuga canadensis</i>	eastern hemlock	+	1	2	3	1	1	
<i>Vaccinium angustifolium</i>	lowbush blueberry	2	2					
<i>Vaccinium corymbosum</i>	highbush blueberry	1	1	+	1			
<i>Viburnum acerifolium</i>	mapleleaf viburnum	+	2	+	1			
<i>Viburnum nudum</i> var. <i>cassinoides</i>	with-rod	1	1	1	1			
<i>Viola sagittata</i>	arrowleaf violet	+	1					
<i>Vitis labrusca</i>	fox grape	+	1					



Figure 4: A dense patch of wild blueberry (*Vaccinium sp.*) growing in the southern portion of Stand 2.



DFW Photo by Jonathan McGrath

Figure 5: American chestnut stump sprouts growing within a retention group, underneath a retained red oak.



Figure 6: Red maple stump sprouts that have been browsed by moose.



DFW Photo by Jonathan McGrath

Figure 7: Long-term retention group focused around red oak mast trees and white pine snag.



Figure 8: Red maple stump sprout standing roughly 10 ft. tall in two growing seasons.