Ecological Management Schedule

Site	McMahon Woods and Fen Nature Preserve	Date	2017 - 2019
Site Number	3208	Prepared	2017
Site Steward	Joe Neumann	Regional Ecologist	Kristin Pink

Overview: Named for a descendent of early settlers, McMahon Woods and Fen Nature Preserve is a 360-acre natural area near Palos Hills. Known informally as "McMahon," the site is located where the Valparaiso Moraine was cut away by an ancient glacial sluiceway. Glacial river bottom and outwash plain comprise much of the preserve, with peat and muck deposits south. A ridge of dune sand is present to the east, and Crooked Creek winds westerly through a wooded corridor. McMahon sustains remnant graminoid fen, freshwater marsh, and sedge meadow and reconstructed dry-mesic oak savanna and prairie. One of the few remaining Illinois breeding populations of the federally endangered Hines' emerald dragonfly (*Somatochlora hineana*) occurs here. The Illinois population of this rare dragonfly is the most genetically diverse (Monroe & Britten 2014), thus critically important to the species' recovery across its entire range.

Site Conditions: McMahon has a history of moderate to heavy disturbance. The fen, marsh, and sedge meadow (collectively FE01) remained intact due to their wetness and unsuitability for cultivation. In other areas, settlers built farmsteads, cleared trees, piled rocks along parcel boundaries, channelized the eastern stretch of Crooked Creek, and hayed nearly all sufficiently dry land (SA01, PR01, UW01). Spoil from construction of the bordering Cal-Sag Channel was piled adjacent the waterway and in the southwest corner of the site (UW02, MA02). The great Ausaganashkee Swamp was destroyed by dredging the canal. The FPCC planted reforestations in SA01 and UW01 circa 1960 and developed a model airplane flying field by the early 1970s. ATVs and mountain bikes are common on an extensive unauthorized trail network on top of the spoil piles. Standing water and fragile sandy soils have not deterred some intrusion by these users into the restored natural area.

A large-scale restoration project sponsored by Openlands was completed in 2014. Invasive brush and trees were removed from FE01, SA01, and PR01. Uplands were planted with native seed. Herbaceous weeds were controlled across the 115-acre project area. Today, reed canary grass and Canada thistle remain problematic in FE01. Sweet clover, tall goldenrod, reed canary grass, and bramble are prominent in SA01. Despite two attempts to convert PR01 from Eurasian meadow to native prairie, the unit continues to be dominated by non-native grasses. Unmanaged areas (UW01, UW02, MA02) are thick with Asian honeysuckle and Oriental bittersweet.

Within the fen, there is a network of small, shallow water courses. These streamlets of discharged groundwater are important breeding habitat for the Hine's emerald dragonfly. The condition of the streamlets ranges from relatively intact channels to deeply incised gullies. De-watered land below the erosional gullies is dominated by cutleaf coneflower and other weedy plants. One contributing factor to this problem is a too-small culvert at 107th Street that backs up water during heavy storm events. Rising creek levels overtop banks, then surface water spills over a topographic saddle into the fen. Another degrading factor may be rows of rocks left by settlers. These divert and concentrate water flow through the fen leading to cuts in the soft, unstructured peat and muck soils. The solution to this problem is not clear.

Goals: Stewardship of McMahon is focused on maintenance of the previously completed Openlands restoration project: invasive species control in the summer and prescribed burning during the dormant season. Continued seed supplementation could improve the plant community in the reconstructed savanna and prairie. Hydrological restoration, including repair of gullies and preventing surface water from entering the fen, is a high priority. Conversion of PR01 to a native plant matrix is a lower priority due to the relatively high input of resources that may be required. Preventing spread of herbaceous weeds should continue in PR01. Conversion of UW01, UW02, and MA02 to native plant communities is the lowest priority.

Alignment of Resources: Conservation Corps and volunteer stewards conducted the bulk of follow-up work in 2016 and 2017, including treatment of sweet clover, reed canary grass, and non-native thistle. Contractors removed invasive brush at a cultural site south of the Morrill Meadow flying field in UW01 circa 2015. Staff conducted prescribed burns across the site in areas with adequate fuel. Staff and research partners monitored dragonflies and their habitat in Summer 2016 and 2017.

In Winter 2017-2018, staff tentatively plan to girdle cottonwood trees and mature invasive brush in FE01 and adjacent areas in SA01.

Additional restoration work is planned by the US Army Corps of Engineers pending funding. This project would involve repairing erosion in streamlet systems through the fen, installing a berm in the topographic saddle to reduce surface water intrusion into the fen, replacing and enlarging the culvert under 107th Street that currently restricts creek flow, and restoring additional creek-side and upland areas.

Overall Goals:	**A. Restore community structure and function** **B. Expand existing native plant communities** **C. Reduce invasive species populations**			
Unit	**Management Objective**	**Activity**	**Notes**	**Crew**
FE01	Restore fen, marsh, and sedge meadow natural communities	**NOTE:** Additional conservation measures are required in sensitive areas to minimize negative impacts to the Hine's emerald dragonfly (HED) and its critical habitat. Areas adjacent to streamlets in the fen require these additional precautions: 1. Access on foot (no vehicles) within a 65-foot buffer of HED larval habitat year-round; 2. Remove woody vegetation by hand (no mowing) near HED larval habitat;		

		3. Stockpile and/or burn piles of cut vegetation in upland areas only; burn debris on elevated platforms where necessary; 4. Stage and fill herbicides and other chemicals in upland areas that are not up-gradient to HED larval habitat or within rapid recharge areas; **5. Spot treat or wick herbicides within a 65-foot buffer of HED larval habitat; herbicide application by foliar spraying invasive vegetation will only be conducted outside of the 65-foot buffer around HED larval habitat**		
		Remove invasive trees and shrubs by girdling	Wi (frozen or firm ground)	Staff
		Treat brush resprouts with foliar herbicide or by cutting and treating stumps	Sp, Su, Fa, Wi	Volunteers, Corps, Staff
		Remove herbaceous invasive plants using best practices; targets include reed canary grass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*), and bull thistle (*C. vulgare*); protect native swamp thistle (*Cirsium muticum*) from off-target damage	Sp, Su	Volunteers, Corps
		Reduce densities of weedy native plants where necessary using best management practices; targets may include sandbar willow (*Salix interior*), cattail (*Typha* spp.), cutleaf coneflower (*Rudbeckia laciniata*), and wingstem (*Verbesina alternifolia*)	Sp, Su	Volunteers, Corps
		Conduct prescribed burn	Dormant season	Staff, Contractors

SA01	Restore savanna and prairie natural communities	Remove invasive trees and shrubs by cutting; treat cut stumps with herbicide; stack and burn cut debris or scatter where appropriate	Late Su, Fa, Wi	Volunteers, Corps
		Treat invasive brush resprouts with foliar herbicide; cut and stump treat shrubs too tall for foliar treatment	Sp, Su, Fa	Volunteers, Corps
		Remove herbaceous invasive plants using best practices; targets include reed canary grass (*Phalaris arundinacea*), sweet clover (*Melilotus* spp.), and nonnative thistle (*Cirsium* spp.); pile cut debris in low quality areas on-site	Sp, Su, Fa	Volunteers, Corps
		Reduce density of weedy dominant native plants using best management practices; targets include Canada goldenrod (*Solidago canadensis*) and common blackberry (*Rubus allegheniensis*); one approach may be to "push back" these species by treating them in a specific area or across a specific boundary rather than attempting wholesale eradication; mowing or other mechanical means are generally preferable to chemical control due to the possibility of off-target damage	Sp, Su	Volunteers, Corps
		Collect and scatter seed sourced from McMahon Woods (first preference) or the Palos Region (second preference); seed from McMahon should not be moved outside of the site due to its commercial origin outside of the Chicago Region; report to the ecologist the species, source, and location where distributed of any seed originating outside McMahon*	Sp, Su, Fa	Volunteers, Corps
		Conduct prescribed burn	Dormant season	Staff, Contractors

PR01	Restore prairie natural community	Remove herbaceous invasive plants using best practices; targets include Canada thistle, bull thistle, sweet clover (*Melilotus* spp.), wild parsnip (*Pastinaca sativa*), and motherwort (*Leonurus cardiaca*); alternatively, the entire unit may be mowed if consideration is made for nesting birds (mow before June 1st and after August 1st) Collect and scatter seed sourced from within McMahon (first preference) or the Palos Region (second preference); report to the ecologist the species, source, and location where distributed of any seed originating outside McMahon* Conduct prescribed burn	Sp, Su Sp, Su, Fa Dormant season	Volunteers, Corps, Staff Volunteers, Corps Staff, Contractors
MA01	Restore marsh natural community	Remove reed canary grass using best practices	Sp, Su, Fa	Volunteers, Corps

**Please report offsite seed to the FPCC ecologist on an annual basis to help us build our seed documentation. At a minimum provide a species list, seed source or sources, and seeding location (preferred at the management unit or as detailed as possible). Information on amount or collection date also welcome if available.*

All management schedule activities are subject to monitoring or supervision by the Forest Preserve District of Cook County. Additional invasive treatments may be appropriate; consult with the regional ecologist for approval. Notify the regional ecologist of additional invasive species, if found.

Site Steward Signature _____ Date _____

Regional Ecologist Signature _____ Date _____

Forest Preserves of Cook County
Herbicide Guidelines

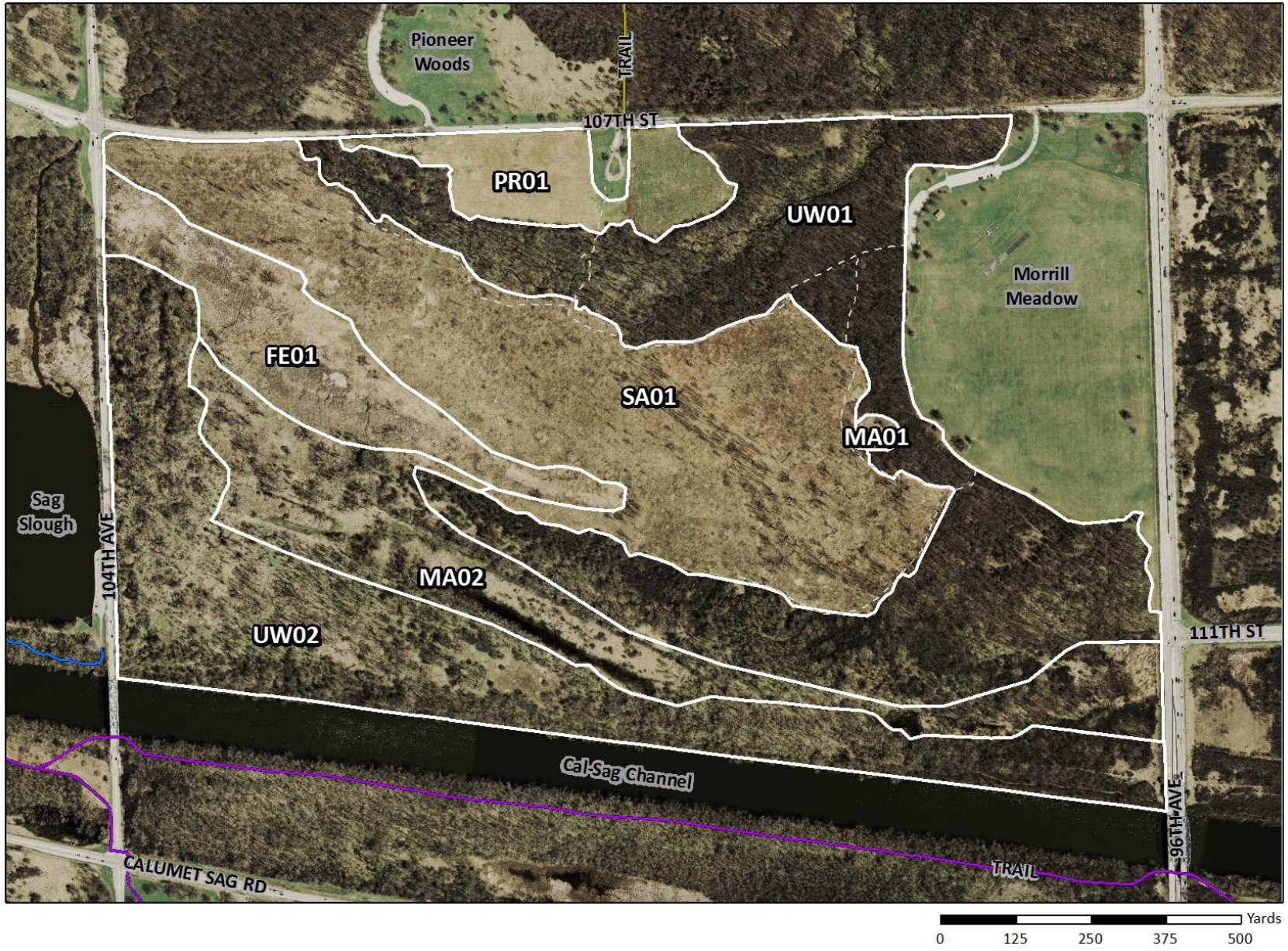
Commonly Used Herbicides & Adjuvants

Brand Name	Generic Names	Main Chemical	Notes
Roundup Pro	Razor Pro, Ranger Pro	Glyphosate	Already includes surfactant
Rodeo	Aquaneat, Glypro, Accord	Glyphosate (aquatic approved)	Use a non-ionic surfactant labeled for use over water
Garlon 3A	Tahoe 3A, Element 3A	Triclopyr	Must use surfactant. Also now aquatic approved.
Garlon 4	Tahoe 4, Element 4	Triclopyr	Mix with basal oil (Ax-it) for stump treatment, no water added. Primarily for stump treatment. Should not be used in hot temperatures.
Poast Plus	Vantage Grass	Sethoxydim	Grass specific herbicide. Does not include surfactant, mix with MSO, then water. Highly sensitive to UV light (apply on cloudy days), not aquatic approved
Transline		Clopyralid	surfactant, use .64 oz per gallon, do not use with rapid permeability soil (e.g. Sandy soils). Upland use only.
Milestone		Aminopyralid	

Target Species	Herbicide Name	% Solution	Oz. per G	Additional Information
Cut Woody Stumps or Chemical Basal Bark Treatments				
*	Garlon 4 (Triclopyr)	20%	25	Must be mixed with basal oil (Ax-it), NO WATER IS ADDED
*	Rounup Pro (Glyphosate)	20-50%		Cut-stump only (no basal bark treatment). Mix w/water. Treat as soon as possible after cutting. In cold weather may freeze.
* Target species includes but are not limited to Buckthorn, Black Cherry, Maple, Basswood, Tree of Heaven, White Poplar, Green Ash, Box Elder, Barberry, Locusts, Dogwoods, and Poison Ivy. **Must use Glyphosate on Honeysuckles**				
Foliar Application of Woody Plants*				
Buckthorns	Garlon 3A (Triclopyr)	5-10%	6.5 - 13	Garlon 3A is mixed w/ water & surfactant
Barberry	Garlon 3A (Triclopyr)	3-5%	5	
Black Locust	Transline (Clopyralid)	0.50%	0.64	
Dogwoods	Garlon 3A (Triclopyr)	5%	6.5	
Multiflora Rose	Garlon 3A (Triclopyr)	3-5%	4 - 6.5	
Oriental Bittersweet	Garlon 3A (Triclopyr)	5-10%	6.5 - 13	
Honeysuckles	Aquaneat (Glyphosate)	5-10%	6.5 - 13	
*All woody species above can also be treated with 5-10% Glyphosate(mix w/water) but this is a non-selective herbicde so great care is needed in sensitive areas				
Foliar Application of Herbaceous Species				
Bird's foot Trefoil	Milestone or Transline	0.25% -- 0.5%	0.32 0.64	
Burdock	Garlon 3A or Rodeo	2.50%	3	
Bull Thistle	Milestone or Transline	0.25% -- 0.5%	0.32 0.64	
Canada Thistle	Milestone or Transline	0.25% -- 0.5%	0.32 0.64	
Cattails	Rodeo	3%	4	
Crown Vetch	Milestone or Transline	0.25% -- 0.5%	0.32 0.64	
Day Lily	Rodeo	2-3%	3 to 4	Gyphosate only
Garlic Mustard	Garlon 3A	3%	3	Can be sprayed in areas without sensitive vegetation or hand pull & bag
Lesser Celandine	Rodeo	4%	5.12	Mix w/non-ionic surfactant. Up to 50% flowering
Lily of the Valley	Rodeo	2-3%	3 to 4	Glyphosate only
Leafy Spurge	Rodeo	10%	13	Difficult to kill. Contact Resource Management if found
Wild Parsnip	Garlon 3A	3%	4	
Phragmites	Rodeo	3%	4	
Purple Loosestrife	Rodeo or Garlon 3A	3%	4	
Reed Canary Grass	Rodeo	3%	4	
Reed Canary Grass	Poast Plus w/MSO (don't apply in standing water)	2%	3	1st mix with oil (MSO) then add water. Best when grass is <8" tall
Spotted Knapweed	Milestone or Transline	0.50%	0.64	
Sweet Clover	Not applicable			Hand pull & bag
Teasels	Milestone or Transline	0.25% -- 0.5%	0.32 0.64	Apply @ flowering, bolting or rosette stage
	Rodeo	2.50%	3	Apply only rosette stage or use Transline
Yellow Iris	Rodeo	5%	6.5	Use surfactant

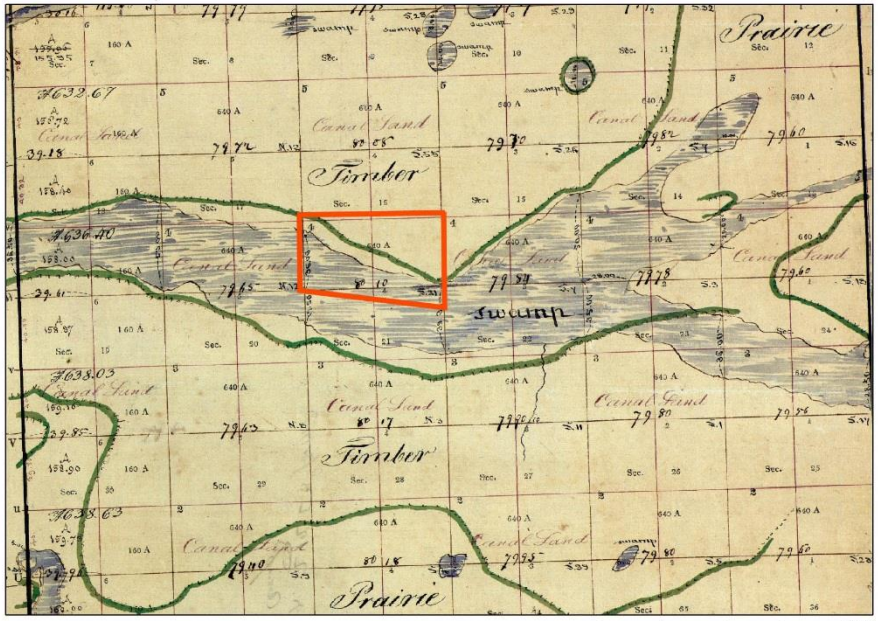
updated Nov 2016

McMahon Woods and Fen Nature Preserve - Natural Communities

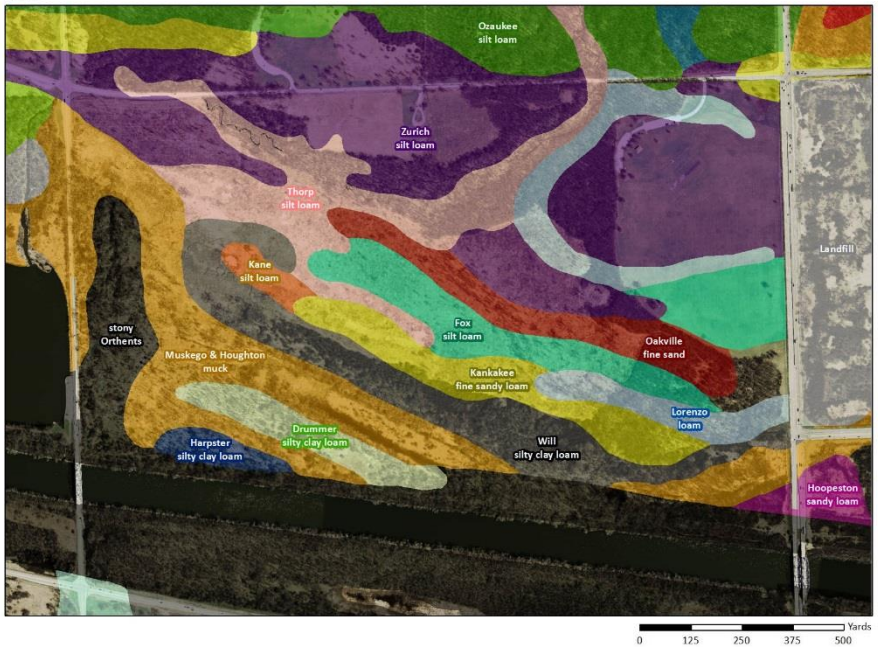


1938

1822 Public Land Survey



Soils



Presettlement Vegetation