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May 29, 2008

Phil Sveum
Sveum Enterprises, LTD
2927 S. Fish Hatchery Road
Madison, WI 53711

RE: Par 4 Property – Open Space and Habitat Evaluations, Fitchburg, Dane County, WI.

Dear Mr. Sveum:

NRC has completed a detailed evaluation of the environmental resources present within your property (“Par 4” property) including our recommendations for preservation and open space. Specifically, we evaluated the heritage and specimen trees, existing tree lines, hydric soils, soil infiltration characteristics, and wetlands. A wetland delineation report and soil evaluation report (with respect to infiltration) were completed previously and are not included with this submittal.

This document is divided into three separate sections as follows.

SECTION 1: WILDLIFE HABITAT ASSESSMENT AND ENHANCEMENT.

- This section addresses the existing wildlife habitats on the property specifically the tree lines and wetlands. Additionally, this section discusses the habitat enhancement plan along Larson Road and wetland buffers.

SECTION 2: HYDRIC SOIL EVALUATION:

- This section summarizes the recent hydric soil field evaluation and delineation that was completed.

SECTION 3: HERITAGE AND SPECIMEN TREES:

- This section includes a summary of a field evaluation completed on the heritage and specimen trees identified on the property.

Report Authors

Jeff Kraemer
Associate Principal, Wetland Ecologist

Bill Poole
Principal Scientist, Wildlife Ecologist

Neil Molstad
Soil Scientist

Regulatory and Scientific Expertise – Wetlands, Soils, Ecology, Restoration

SECTION 1. WILDLIFE HABITAT ASSESSMENT AND ENHANCEMENT

Introduction

In an effort to address questions regarding the use of existing tree/fence lines as travel corridors and habitat by local wildlife species and the anticipated wildlife use of proposed habitat creation and enhancements as portrayed on the Northeast Neighborhood conceptual Plan, William Poole, a Senior Principal wildlife biologist and Jeff Kraemer, Assoc. Principal Wetland Ecologist from Natural Resources Consulting, Inc., (NRC) conducted a habitat evaluation on May 23, 2008. The results and conclusions of this assessment are presented below.

Wildlife Habitat Assessment Results

The subject property is primarily comprised of agricultural row crops and areas designated as community gardens. An overgrown fence line (Tree Line A) runs the length of the property from Goodland Park Road north to a mature forest complex and nearly divides the property in half. A private residence is immediately adjacent to the south end of this tree line and additional residences are located immediately south of Goodland Park Road. An additional tree line (Tree Line B) extends from Tree Line A west to County Hwy. MM. A small wooded corridor is located near the northeast corner of the property and extends west from Larsen Road to the larger forest community. Figure 1 identifies the features described above.

Tree Line A formed along a former fence line as evident by remnants of the fence that remain. In addition, the fence line was used to stockpile rocks that were removed from the adjacent agricultural fields. Piles of rocks and scattered larger rocks are prevalent throughout this tree line. The vegetation composition of Tree Line A is largely non-native and invasive trees, shrubs and herbaceous vegetation. Dominant species include box elder, black locust, common buckthorn, honeysuckle, burdock, and thistle. A few young oak, sugar maple, and black cherry trees are scattered throughout the tree line. The average width of this tree line is approximately 60-70 feet with the density of vegetation being greater within the southern half. There is a gap in the tree line near the junction with Tree Line B to allow passage of farm machinery and there are sections on either side of this gap where the tree and shrub layers are fairly sparse. The attached photographs provide examples of the vegetation composition and structure of this tree line. Noteworthy observations include the absence of a pronounced game trail running through the length of the tree line and fresh raccoon and deer tracks on the field road that runs parallel to the west side of the tree line.

Tree Line B is similar in composition and structure to Tree Line A. However, it is slightly wider, approximately 100 feet, along a portion of its length and has a more robust stand of invasive burdock and giant ragweed along the outer edges. There was a noticeable game trail running through the center of this tree line.

The wooded corridor near the northeast corner of the property is consistent in composition and structure with the two tree lines described above. However, there is a prevalence of highly invasive garlic mustard throughout the understory.

Three wetland areas have been delineated within the agricultural portions of the property. Wetland #1 is a narrow ditch extending approximately 280 feet north of Goodland Park Road and is largely comprised of reed canary grass and sandbar willow with open water. Wetland #2 is a small area located within the agricultural field immediately south of Tree Line B and east of County Hwy. MM. This wetland is

typically farmed. Wetland #3 is the largest of the three wetlands (7 acres) and is located within the agricultural field near the east-central portion of the property. Although typically farmed, Wetland #3 was inundated during the time of the habitat assessment.

Proposed Habitat Improvements

As part of the NE Neighborhood Concept Plan, a significant area along the east side of the property is proposed to be developed as natural open space. This will entail a combination of wetland restoration and installation of a mesic prairie and savanna prairie. The wetland will consist of a wet prairie/shallow marsh complex and the savannah prairie will include scattered burr oak trees with mixed short and tall grass prairie components. In addition to this habitat restoration a row of trees is proposed to be planted along the western side of Larsen road. Figure 3 provides a conceptual plan for the proposed natural open space.

Discussion

Overgrown fence lines and tree lines through agricultural lands are used by wildlife, typically terrestrial mammals, as travel corridors to move between otherwise larger habitat patches. Also, depending on the vegetation composition and structure of the corridor, some species may temporarily or seasonally reside in such habitat. The tree lines found on the subject property are not unique to this geographic area and are not a requirement for wildlife movement in such mixed-use landscapes. Agricultural crops such as corn also provide concealment cover for wildlife to travel between permanent habitat areas such as woodlots, grasslands, and wetlands.

In the case of Tree Line A, due to the density of the understory vegetation and other obstructions such as rock piles, fence remnants and downed limbs, larger wildlife species such as white-tailed deer, wild turkey and coyote are most likely to travel along the outer edges of the tree line. They may occasionally bed or roost in certain areas of the tree line on a seasonal basis. However, more suitable habitat for such activities exists to the north and on other adjacent properties. Smaller species such as fox, raccoon, woodchuck, squirrel and small rodents may actually travel through the vegetation and create dens or occupy tree cavities. Again, more suitable habitat for these species exists to the north and on other adjacent properties.

The limiting factor to the use of this particular tree line as a travel corridor is the fact that there are several residences located between the south end of the tree line and other suitable habitat further south of Goodland Park Road thereby, causing much of the wildlife movement to occur at night. Because the darkness of night creates concealment for wildlife movement, the concealment of the tree line is less important. In addition to the mammals, there is limited opportunity for common songbird species such as brown thrasher, American robin, song sparrow house wren and gold finch to nest in the tree line. All of the wildlife species mentioned above are commonly found within urbanizing environments and are much more likely to utilize other habitats such as the larger woodland to the north and wetland and woodland habitat east of Larson Road.

Tree Line B is likely to support the same wildlife species identified for Tree Line A. The primary difference is that Tree Line B has a somewhat open understory and a discernable game trail running through the middle. Because of the size, composition and configuration of the wooded corridor located near the northeast corner of the property it functions similarly to the two tree lines on the property.

The proposed natural open space area will be significantly larger than the existing tree lines and will

provide more diverse and higher quality wildlife habitat and subsequently greater wildlife diversity. It will consist of native vegetation, as opposed to the non-native and invasive species found in the tree lines, and will likely attract a number of wildlife species currently not found on the property. These could include reptiles and amphibians such as chorus frog, leopard frog, tree frog, American toad, common gartersnake, brown snake and red-bellied snake. Depending on the level of inundation that will occur in the restored wetland, turtle species such as snapping turtle, painted turtle and potentially Blanding's turtle may occupy this area as well. Grassland songbirds such as meadowlark, field sparrow, bluebird, bobolink, dickcissel and vesper sparrow would benefit greatly from the development of the proposed prairie habitat, which is much more uncommon than the existing tree line habitat.

Wetland buffer

The proposed 75-foot natural area buffer to be developed between the restored wetland and the proposed residential development will provide adequate wildlife habitat when evaluated in context with the overall larger habitat area that is to be created. For example, the Wisconsin Department of Natural Resources (WDNR) provides guidance for development projects regarding the width of upland Butler's gartersnake habitat that should be protected around a wetland. If suitable habitat does not currently exist around the wetland (i.e. a farm field), the equivalent of a 75-foot buffer of suitable habitat should be established around the wetland. The WDNR understands that a firm 75-foot line provides no more or no less overall habitat than a line that varies between 50 feet and 100 feet as long as the sum of the acreage is equal and, therefore, the DNR finds it perfectly acceptable to design a development project with variable wildlife habitat buffers around the wetland.

In this particular case, there is no current wildlife value to this farmed wetland and there are no species of concern to be protected through a larger buffer. Most wetland buffers that are more than 75 feet in Wisconsin and other states are put in place to protect existing wildlife usage, particularly threatened and/or endangered species and adjacent stream or lake habitat. This is not the case with this wetland. The Sveum open space plan is simply specifying a wetland restoration and enhancement that will surely be a significant improvement for wildlife habitat than its current state. Wildlife species that are likely to colonize this wetland are likely to be common, urbanized species that will flourish in the amount and quality of habitat being proposed.

Finally, it is important to differentiate the distance of buffers and functionality of buffers. Obviously, 300 feet of mowed turf grass and active park space would not provide nearly the same wildlife and water quality benefits as 75 feet of high quality habitat and water quality protection features.

Conclusions

The existing tree lines on the subject property likely provide wildlife travel corridors and a limited amount of marginal habitat. The overall existing vegetation composition is mostly comprised of non-native and invasive species. The proposed natural open space area will provide a larger area (45+ acres) of quality wildlife habitat comprised of native species. This area will include more habitat diversity and will likely attract a greater diversity of wildlife. Because this restored habitat area is a linear feature extending from the south end of the subject property nearly to the larger forest complex to the north it will provide the same wildlife travel corridor function as the existing tree lines and will not be compromised by buildings blocking access to the wetland habitat located immediately south of Goodland Park Road.

The overall extent of wildlife habitat that will be created around the restored wetland will more than make up for the difference between a 300-foot wetland buffer and a 75-foot buffer. In this case, a 300-ft buffer around the existing 7-acre farmed wetland (W-3) would result in approximately 17 acres of additional open space. The proposed wetland buffers with varying degrees of width proposed in the Sveum plan will result in substantially more than 17 acres of wetland buffer, all comprised of diverse wildlife habitat.

SECTION 2. HYDRIC SOIL EVALUATION

Introduction

Soil investigations were conducted on the Par 4 property in Fitchburg, WI by Neil Molstad of NRC and Dave Roberts of Soil Investigations in November 2007 and by Mr. Molstad on May 28, 2008.

The purpose of the soil evaluations in November 2007 was to determine infiltration suitability of the soils. Twenty-four soil pits located in representative landscape positions across the site were excavated with a backhoe up to 15 feet in depth for this evaluation. The soil evaluation was completed following the Wisconsin Department of Natural Resources "Site Evaluation for Stormwater Infiltration (1002)". The presence of hydric soils was noted, among many other soil characteristics.

Since the primary purpose of this evaluation was not necessarily to determine the extent of hydric soils, a second field evaluation was completed on May 28, 2008. During this investigation 26 additional soil pits were evaluated with shovel dug pits up to two feet in depth. Sample points were focused in areas likely to contain hydric soils and were used to delineate the extent of hydric soils.

Methodology

NRC review existing information to assist in the completion of the hydric soil mapping study including:

- USGS topographic maps;
- Natural Resources Conservation Service (NRCS) soil survey,
- Wisconsin Wetland Inventory (WWI) mapping
- Aerial photography
- Par 4 Soil Evaluation Report completed in Nov. 2007, and
- Par 4 Wetland Delineation Report completed in Oct. 2007.

The soil investigation focused on areas within the Property that contained soil units that possibly contain hydric inclusions, areas containing flat or depressional topography, and areas within the Property delineated as wetland.

Soil pits were evaluated using shallow shovel dug pits up to 24 inches in depth. Soil horizons, color, texture, and redoximorphic features were recorded and are included on log sheets (enclosed). The identification of hydric soils was based on current guidelines developed by the NRCS published in the "Field Indicators of Hydric Soils in the United States, Version 6.0."

All soil pit locations were surveyed with GPS and the hydric soil boundary was identified and delineated in the field and surveyed with GPS.

Results

Three of the soil map units found on the Property, the Troxel series (TrB), the Virgil series (VrB), and the Radford series (RaA), can possibly contain inclusions of hydric soils (up to 25% of the map unit). However, it must be emphasized that the three series above are **NOT** hydric soil units in and of themselves: the Troxel series is well or moderately well drained, while the Virgil and Radford series are both somewhat poorly drained. These three soil series do not exhibit hydric soil field indicators based on

the NRCS soil descriptions for these units.

Soil Pits H, J, L, T, U, V, and Y exhibited NRCS hydric soil field indicators. Three areas within the Property were delineated as containing a majority of hydric soils. This follows standard NRCS soil mapping procedures. These three areas are shown on the attached exhibit (Figure 2), and tend to correlate closely with the three delineated wetland areas. The majority of the areas on the Property mapped as containing hydric soil inclusions do not contain hydric soils outside of the field delineated hydric soil boundary.

Discussion

In general, the soil evaluations conducted by NRC and Soil Investigations confirmed that the NRCS Soil Survey mapping on the Par 4 property is accurate with a few exceptions. The NRCS does not identify the presence of hydric soil units within the property, only the potential for hydric inclusions to occur within otherwise non-hydric soil units. Conversely, NRC and Soil Investigations identified hydric soil units, in association with depressional areas and wetlands on the property that were not previously identified by NRCS. These hydric soil units are likely areas of Sable and/or Orion, wet soils, both of which are mapped in the vicinity of the Property.

It is important to note that the soil mapping for Dane County completed by the NRCS was generally conducted in the late 1960's through the early 1970's. The mapping was completed mostly by using aerial photographs and stereo pairs and soil units were identified based on topography, color patterns on the photography, and the soil scientists' knowledge of the local landscape. Representative descriptions of various soil units were generally selectively completed in the field and by no means were field evaluations necessarily completed to delineate soil units, including hydric soil units, in and around the Property. Locations and extent of hydric soils are always subject to field verification.

SECTION 3: HERITAGE AND SPECIMEN TREES:

Introduction

Jeff Kraemer and Dave Giblin of NRC completed field assessments of the possible heritage and specimen trees identified on the City of Fitchburg's Park & Open Space Proposal document dated May 15, 2008. The specific trees are referenced by number and identified on the enclosed Figure 1 (Tree Lines & Wetlands).

Results

Five heritage trees are located along the northwestern portion of the Par 4 property, identified as trees 1-5 (see enclosed photos). All five of these trees are bur oaks with diameters at breast height (dbh) ranging from 35 to 65 inches. The oak trees are overgrown with boxelder and shrubs around the base and several are in marginal condition. Specifically, trees 1, 2, and 5 contained varying degrees of rot within the trunk and upon the crown. A very large limb had recently fallen from tree #1. The Sveum plan calls for these trees to be protected in open space. The City may want to consider having these trees inspected by an arborists to determine if they may pose a safety hazard.

The City's parks proposal also identified several specimen trees in the central and eastern portions of the Par 4 property. NRC also evaluated these trees. We found that trees 8, 9, and 10 are clumps of mostly boxelder and honeysuckle with a couple of black cherry's (see enclosed photos). We noted one small to moderate sized split trunk bur oak (18" dbh each) growing within tree clump #10. There were also piles of field stone noted within the tree clumps and many invasive herbaceous species. Trees 6 and 7 occur along the edges of the tree line and are also moderate sized bur oaks with approximate dbh's of 20" to 24". These are unlikely heritage oaks as they do not appear to be over 200 years old.

Discussion

There does not appear to be any justification for including trees 8-10 within any preservation plan as they are comprised of invasive species and common, mostly weedy tree species. They likely exist in these locations because the field stones were piled there and subsequently farmed around allowing the trees to exist. The young bur oaks identified as 6 and 7 are not heritage trees and additional bur oaks will be planted in conjunction with the Sveum passive open space and wildlife enhancement plan along Larson Road which will more than mitigate the loss of these two young oaks.

SITE FIGURES

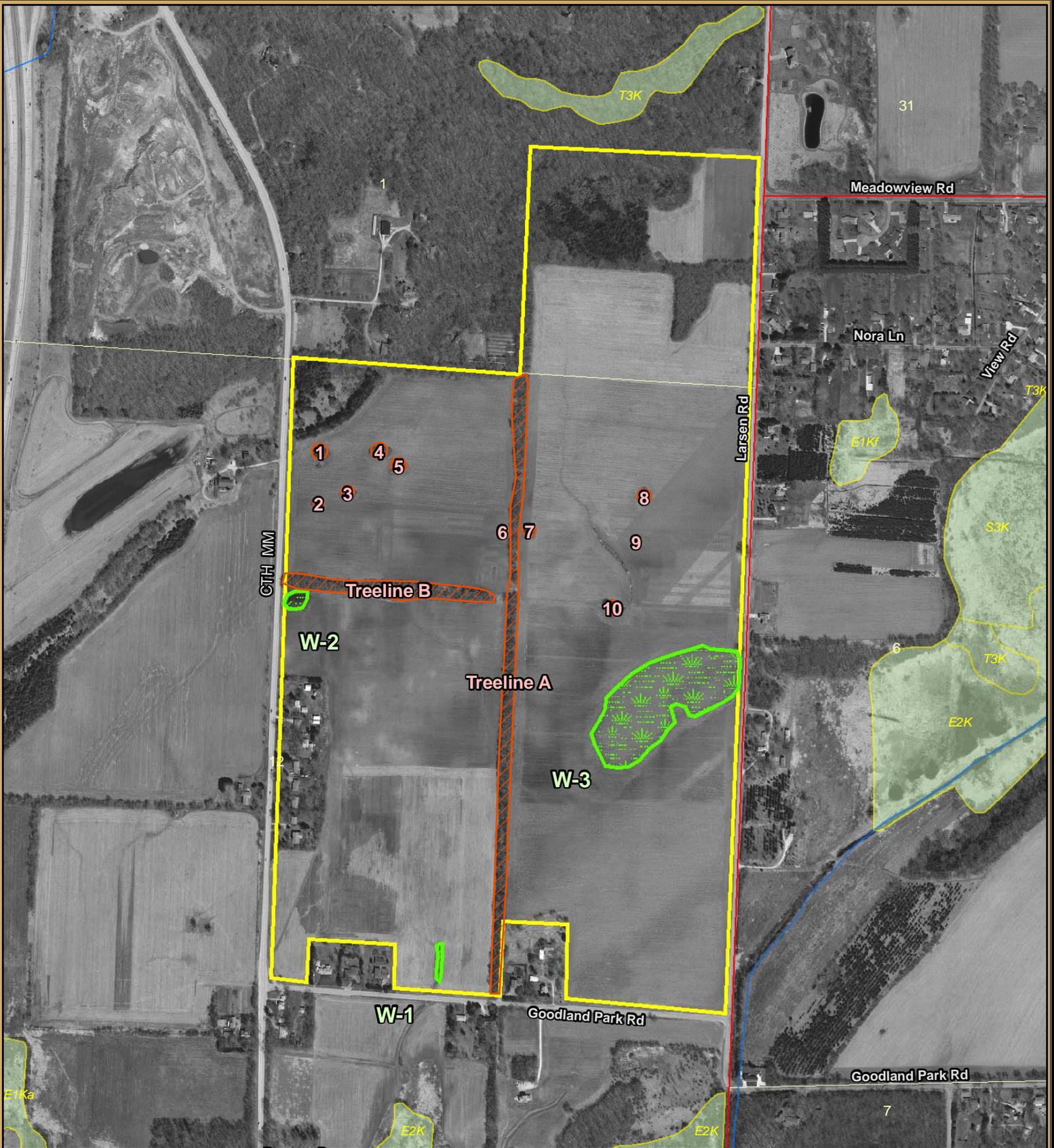


FIGURE 1. TREE LINES & WETLANDS
Par 4 Property - Sveum Enterprises



Location

Sections 1 & 12, T6N, R9E,
 City of Fitchburg, Dane Co., WI

Project Information

NRC Project Number #: 007-0275-01
 Modified May 30, 2008

0 375 750 Feet

Legend

- Project Location
- Existing Trees
- Field Delineated Wetlands
- 24K Hydro Layer
- Town Line
- Section Line
- WWI Dane County

NRC

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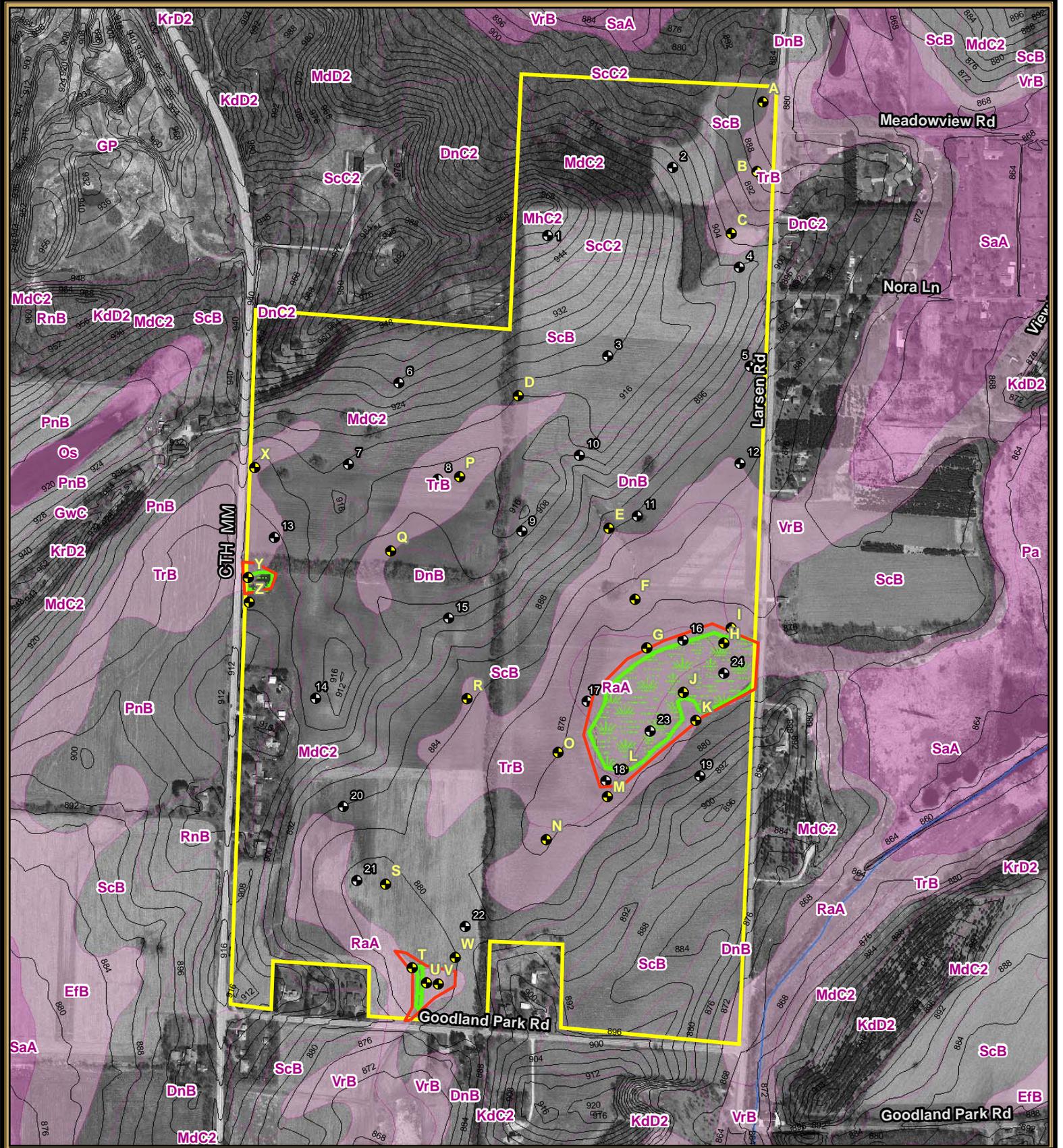


FIGURE 2. HYDRIC SOIL FIELD DELINEATION
Par 4 Property - Sveum Enterprises



Location
 Sections 1 & 12, T6N, R9E,
 City of Fitchburg, Dane Co., WI

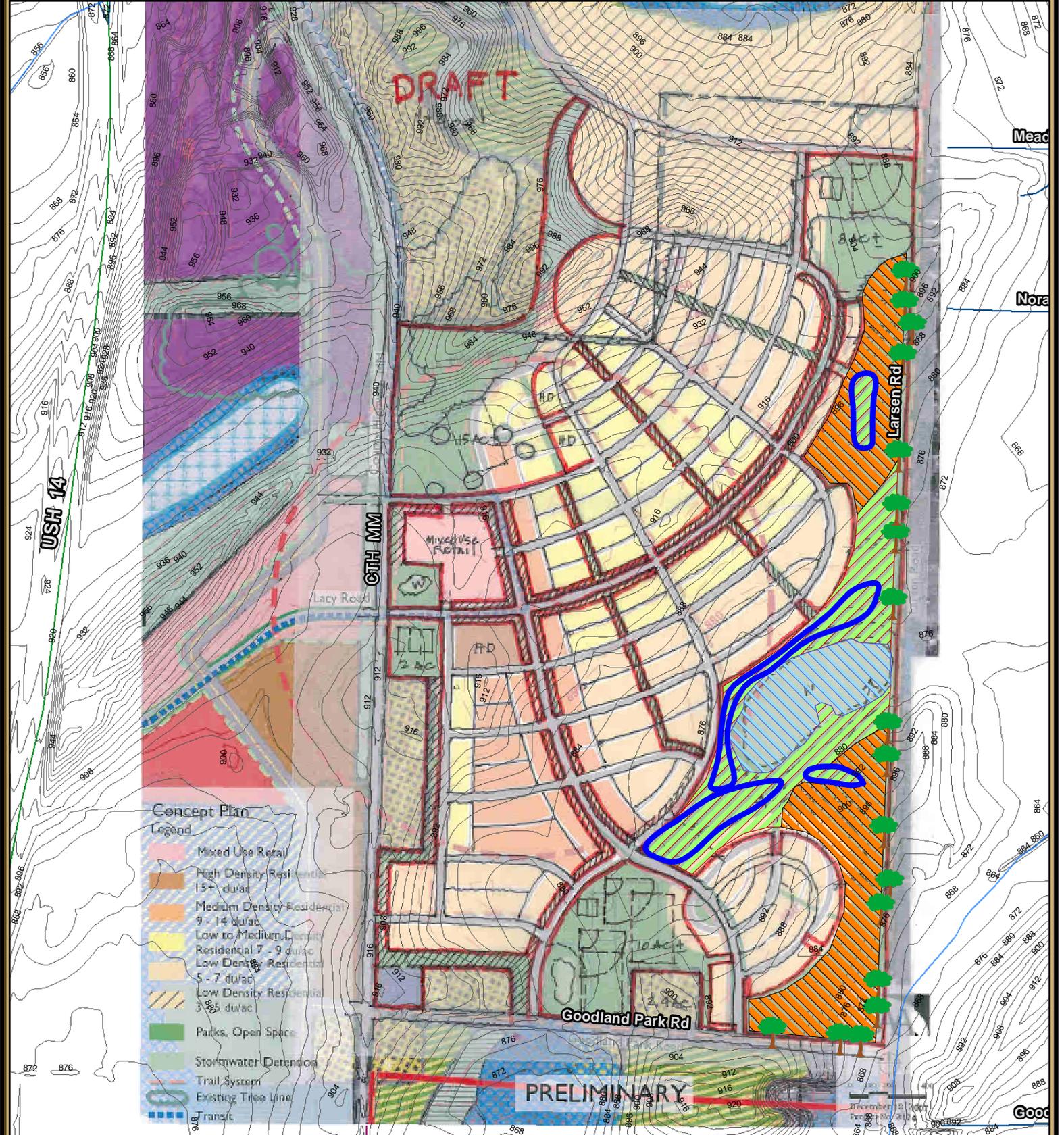
Project Information
 NRC Project Number #: 007-0275-01
 Modified May 30, 2008

0 375 750 Feet

Legend	
	Project Location
	Soil Pit Locations
	Additional Soil Pit Locations
	Field Delineated Wetlands
	Extent of Hydric Soils
	4 Foot Countours
	NRCS Soil Survey Data
	Hydric Soils
	Poss. Hydric Inclusions
	Non-Hydric Soils

NRC
 Natural Resources Consulting, Inc.

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**Figure 3. Passive Open Space and Wildlife Enhancement Plan
Par 4 Property - Sveum Enterprises**



Location
Sections 1 & 12, T6N, R9E,
City of Fitchburg, Dane Co., WI

Project Information
NRC Project Number #: 007-0275-01
Modified May 30, 2008

0 500 1,000 Feet

Legend

- Existing 4 Foot Countours
- Infiltration Basins
- Proposed Plantings**
 - Mesic Prairie = 16.7 Acres
 - Savanna Prairie = 20.4 Acres
 - Wetland Rest. & Enhan. = 7.5 Acres
- Native Trees

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SOIL EVALUATION LOG SHEETS

Soil Pit Descriptions – Par 4 Property, May 28, 2008

Note: Soil Pits meeting NRCS hydric soil field indicators are highlighted in yellow.

Location	Horizon Depth (in.)	Matrix Color	Soil Texture	Redoximorphic Features	Other features
Pit A	0 – 10	10YR 4/3	Silt loam	Few, distinct, 10YR 4/4	
	10 – 23	10YR 3/1	Silt loam	Few, distinct, 10YR 4/4; Common, distinct, 10YR 5/2	
	23 – 27	10YR 5/2	Silt loam	Common, distinct, 10YR 4/4	
Pit B	0 – 10	10YR 3/2	Silt loam	Few, distinct, 10YR 4/4	
	10 – 18	10YR 4/3	Silty clay loam	Few, distinct, 10YR 4/6; Common, distinct, 10YR 5/2	Clay films
	18 – 24	10YR 4/3	Silty clay loam	Common, distinct, 10YR 5/6; Common, distinct, 10YR 4/6	Clay films
Pit C	0 – 8	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	8 – 17	10YR 4/3	Silt loam	Common, distinct, 10YR 5/2	
	17 – 22	10YR 4/4	Silty clay loam	Common, distinct, 10YR 5/2	Clay films
Pit D	0 – 7	10YR 3/2	Silt loam	Few, distinct, 10YR 4/4; Few, distinct, 10YR 5/2	
	7 – 11	10YR 4/3	Silt loam	Few, distinct, 10YR 5/2	
	11 – 20	10YR 4/3	Silty clay loam	Common, faint, 10YR 4/4; Common, distinct, 10YR 5/2	Clay films

Location	Horizon Depth (in.)	Matrix Color	Soil Texture	Redoximorphic Features	Other features
Pit E	0 – 7	10YR 3/2	Silt loam		
	7 – 16	10YR 4/4	Silty clay loam	Few, prominent, 7.5YR 4/6; Common, distinct, 10YR 5/2	Clay films
Pit F	0 – 11	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	11 – 20	10YR 4/3	Silty clay loam	Many, distinct, 10YR 4/6; Common, distinct, 10YR 5/2	Clay films
Pit G	0 – 10	10YR 3/2	Silt loam		
	10 – 16	10YR 3/3	Silt loam	Common, distinct, 10YR 5/2	
	16 – 24	10YR 3/1	Silt loam		
	24 – 27	10YR 3/1, 10YR 4/2	Silt loam	Common, prominent, 7.5YR 4/6	
Pit H	0 – 7	10YR 4/2	Silt loam	Many, prominent, 7.5YR 4/6	
	7 – 14	10YR 3/2	Silt loam	Common, distinct, 10YR 4/6	
Pit I	0 – 10	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	10 – 20	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2; Few, distinct, 10YR 4/4	
Pit J	0 – 6	10YR 4/2	Silt loam	Common, prominent, 7.5YR 4/6	
	6 – 11	10YR 4/2	Silt loam	Common, distinct, 10YR 4/6	
	11 – 15	10YR 5/2	Silty clay loam	Common, distinct, 10YR 5/6	

Location	Horizon Depth (in.)	Matrix Color	Soil Texture	Redoximorphic Features	Other features
Pit K	0 – 11	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2; Few, distinct, 10YR 4/4	
	11 – 18	10YR 4/3	Silty clay loam	Many, distinct, 10YR 4/6; Common, distinct, 10YR 5/2	Clay films
Pit L	0 – 8	10YR 3/2	Silty clay loam	Few, distinct, 10YR 4/4; Few, distinct, 10YR 5/2	
	8 – 20	10YR 3/2	Silty clay loam	Common, distinct, 10YR 5/2; Few, distinct, 10YR 4/4	
	20 – 24	10YR 3/1	Silt loam		
Pit M	0 – 15	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	15 – 20	10YR 3/2	Silt loam	Few, distinct, 10YR 4/4; Common, distinct, 10YR 5/2	
	20 – 25	10YR 4/3	Silty clay loam	Common, distinct, 10YR 4/6; Common, distinct, 10YR 5/2	Clay films
Pit N	0 – 20	10YR 3/1	Silt loam	Few, distinct, 10YR 5/2	
	20 – 30	10YR 3/2	Silt loam	Common, distinct, 10YR 3/4	
Pit O	0 – 10	10YR 3/2	Silt loam		
	10 – 15	10YR 4/4	Silty clay loam	Few, distinct, 10YR 5/2	

Location	Horizon Depth (in.)	Matrix Color	Soil Texture	Redoximorphic Features	Other features
Pit P	0 – 12	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	12 – 16	10YR 3/1	Silt loam		
	16 – 22	10YR 4/2	Silt loam	Common, distinct, 10YR 4/6	
Pit Q	0 – 12	10YR 3/2	Silt loam		
	12 – 16	10YR 3/1	Silt loam		
	16 – 27	10YR 2/1	Silt loam		
Pit R	0 – 8	10YR 3/2	Silt loam		
	8 – 15	10YR 4/3	Silty clay loam		Clay films
	15 – 18	10YR 4/4	Silty clay loam		Clay films
Pit S	0 – 8	10YR 3/2	Silt loam		
	8 – 14	10YR 3/2	Silt loam	Few, distinct, 10YR 5/2	
	14 – 24	10YR 2/1	Silt loam	Common, distinct, 10YR 5/2	
Pit T	0 – 10	10YR 3/1	Silt loam	Few, distinct, 10YR 5/2	
	10 – 16	10YR 3/1	Silty clay loam	Common, distinct, 10YR 4/4; Common, distinct, 10YR 5/2	
	16 – 20	10YR 4/2	Silty clay loam	Common, distinct, 10YR 4/6	
Pit U	0 – 4	10YR 3/1	Silt loam		
	4 – 24	10YR 3/1	Silt loam	Common, distinct, 10YR 4/4	
Pit V	0 – 14	10YR 3/2	Silt loam	Common, distinct, 10YR 3/4	
	14 – 20	10YR 3/1	Silt loam	Common, distinct, 10YR 4/4	

Location	Horizon Depth (in.)	Matrix Color	Soil Texture	Redoximorphic Features	Other features
Pit W	0 – 10	10YR 3/2	Silt loam		
	10 – 14	10YR 4/3	Silt loam		
Pit X	0 – 7	10YR 3/2	Silt loam		
	7 – 14	10YR 4/4	Silty clay loam		Clay films
Pit Y	0 – 6	10YR 3/1	Silt loam		
	6 – 16	10YR 3/1	Silt loam	Common, distinct, 10YR 5/2; Common, distinct, 10YR 4/4	
	16 – 20	10YR 2/1	Silt loam	Common, distinct, 10YR 5/2; Common, distinct, 10YR 4/4	
Pit Z	0 – 14	10YR 3/2	Silt loam		
	14 – 19	10YR 4/3	Silty clay loam		Clay films

SOIL INVESTIGATIONS LLC

608-697-0443

dsrob@verizon.net

Client: Par 4 Property

Project Number: 007-0275-01-002

Date: 11/19/07

SOIL DESCRIBED BY: David Roberts, PSS 117

Soil Pit #: 8	Soil Map Unit: TrB, Troxel Silt loam, 2 to 6% slopes		
Veg/crop:	Classification:		
Slope:	Parent Material: silty alluvium	Hydric Soil:	
Elevation:	Position:	** Field Indicator(s):	
	Drainage Class:	** "Field Indicators of Hydric Soils" - version 6 * NR 151 Technical Standard 02/04 design infil rate from Rawls, 1998	
	Est. Seasonal Saturation:		
	Observed Groundwater:		

Additional Notes:

This soil is underlain with fine sandy loam till at 158". Indicators of wetness are related to permeability, not groundwater.

Horizon	Depth (inches)	Matrix Color (moist)	Texture	Unified class.	Structure (Gr / Size / Type)	Consistence	Coarse Fragments (% & kind)	Redox Features (abund/size/contrast/color)	Boundary	Design Infil. Rate (inches / hour)*
Ap	0-11	10YR2/2	sil	ml	2m&fsbk	fr			as	0.13
Ab11	11-16	10YR2/1	sil	ml	2mgr	fr			as	0.13
Ab12	16-24	10YR3/3	sil	cl	2msbk	fr			cw	0.13
Bt1	24-34	7.5YR3/4	sil	cl	2m&copr	fr		c2d 5YR4/6	cw	0.13
Bt2	34-46	7.5YR3/4	sicl	cl	2m&copr	fi		c2p 5YR4/6 & f2d 5Y5/2	aw	0.04
2C	46-105	7.5YR4/4	sicl	cl	m	fi		f1p 7.5YR5/8 & f2d 5Y5/1	aw	0.04
3C	105-158	10YR6/4	s	sp	sg	lo			aw	3.60
4C	158-180	7.5YR4/4	fsl	sm	m	fr	5% gr			

SOIL INVESTIGATIONS LLC

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dsrob@verizon.net

Client: Par 4 Property

Project Number: 007-0275-01-002

Date: 11/16/07

SOIL DESCRIBED BY: Neil Molstad compiled by D. Roberts

Soil Pit #: 12	Soil Map Unit: VrB, Virgil silt loam, 1 to 4% slopes		
Veg/crop:	Classification:		
Slope:	Parent Material: sandy loam till	Hydric Soil:	
Elevation:	Position:	** Field Indicator(s):	
	Drainage Class:	** "Field Indicators of Hydric Soils" - version 6	
	Est. Seasonal Saturation:		
	Observed Groundwater:		

* NR 151 Technical Standard 02/04

Additional Notes:

Evidence of saturation at 32 inches. May be related to permeability and not groundwater.

design infil rate from Rawls, 1998

Horizon	Depth (inches)	Matrix Color (moist)	Texture	Unified class.	Structure (Gr / Size / Type)	Consistence	Coarse Fragments (% & kind)	Redox Features (abund/size/contrast/color)	Boundary	Design Infil. Rate (inches / hour)*
Ap	0-11	10YR2/2	sil	ml	2msbk	fr			cs	0.13
A12	11-17	10YR3/1	sil	cl	2fpl	fr			cs	0.13
Ab	17-28	10YR2/1	sil	cl	2mgr	fr			cs	0.13
A2	28-32	10YR4/2	sil	cl	2msbk	fr			cs	0.13
Bt1	32-41	10YR5/3	sil	cl	2msbk	fr		c1d 10YR4/6	cw	0.13
Bt2	41-65	10YR4/3	sicl	cl	1cosbk	fi		m1d 10YR4/6 & m2d 10YR5/2	gs	0.04
C	65-86	10YR4/3 & 10YR5/1	sicl	cl	m	fi		m2d 10YR4/6	as	0.04
2C	85-150	7.5YR5/4	grsl	sm	m	fr				0.50

SITE PHOTOGRAPHS



Heritage Oak 1.JPG



Heritage Oak 2.JPG



Heritage Oak 3.JPG



Heritage Oaks 3 & 5.JPG



Tree Clump #10.JPG



Tree Clump #10 (2).JPG



Tree Clump #10 (3).JPG



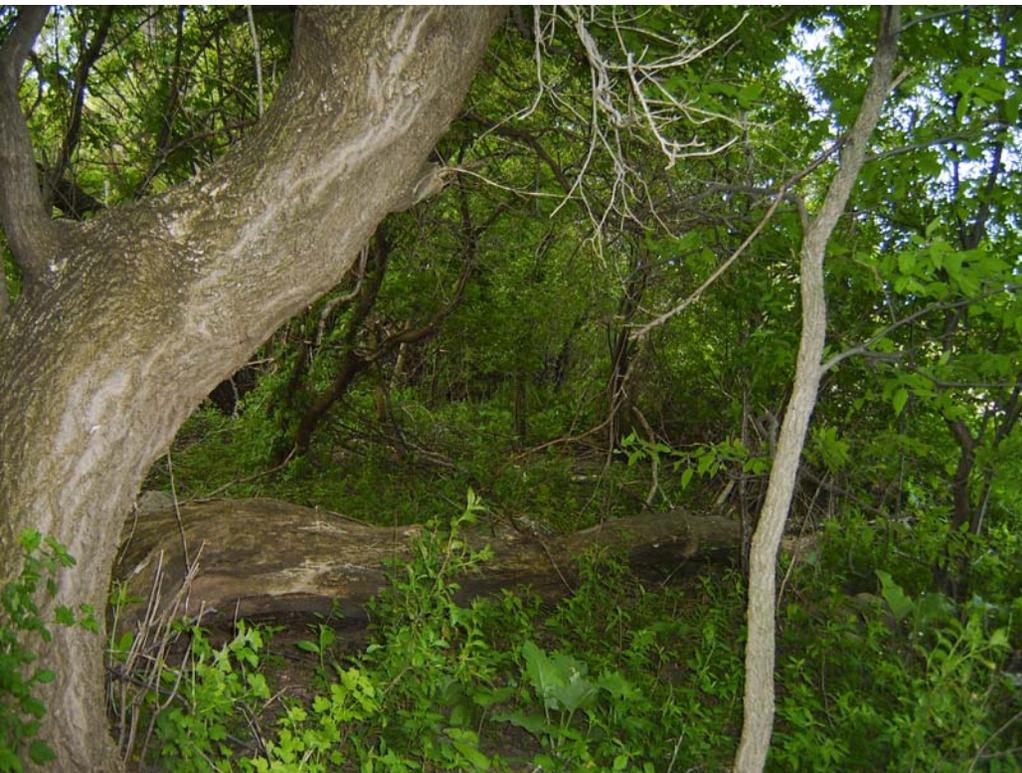
Tree Clump #10 (4).JPG



Tree Clump #8.JPG



Tree Clump #9.JPG



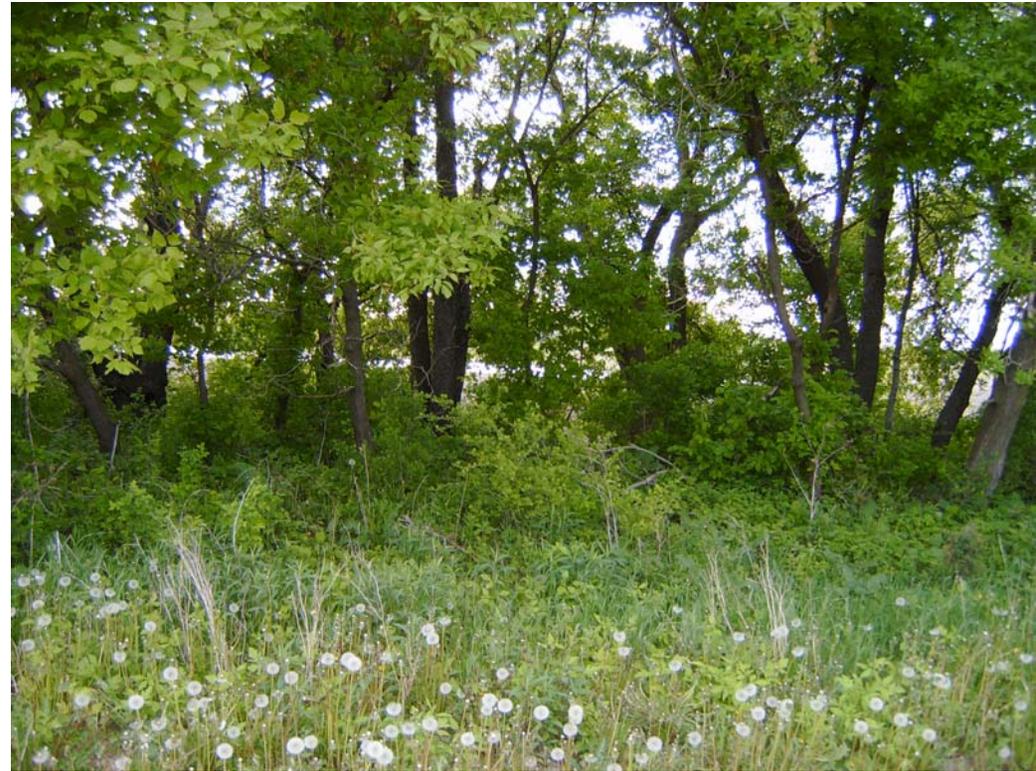
Treeline A Interior S. Side.JPG



Treeline A Interior S. Side2.JPG



Treeline A View N. at Goodland.JPG



Treeline A-Central Portion.JPG



Treeline B - View W. from E...JPG



Treeline B Interior.JPG



Treeline B Interior 2.JPG



Wetland 1.JPG



Wetland 2.JPG



Wetland 3.JPG



Wetland 3 (2).JPG

NATIVE HABITAT RESTORATION PHOTOS



Mesic Prairie.jpg



Prairie.JPG



Savannah.JPG



Wetland Restoration.JPG

RESUMES



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William R. Poole *Senior Principal Scientist*

Education

B.S. – Biology & Wildlife Management
University of Wisconsin – Stevens Point
1985

Employment Experience

Senior Principal Scientist - NRC, Inc.
February 2002 – Present

Senior Scientist - URS Corp.
2000 to 2002

Staff Scientist - Mead & Hunt, Inc.
1990 to 2000

Wildlife Management/Research Assistant –
WDNR, 1988 to 1990

Animal Control Officer - Portage County
Humane Society, 1987-1988

Environmental Scientist – Ecology &
Environment Inc., 1986-1987

Environmental Technician - EA Science &
Technology, 1985-1986

Professional Development

- OSHA 40-Hour Health and Safety Training for Hazardous Waste Site Workers
- Non-metallic Mine Reclamation Planning – Wisconsin Dept. of Natural Resources
- Natural Heritage Inventory Methodology and Screening Training – Wisconsin Dept. of Natural Resources
- Wisconsin Karner Blue Butterfly HCP Effectiveness Monitoring Training – Wisconsin Dept. of Natural Resources
- Basic Wetland Delineation Training Workshop – University of Wisconsin-La Crosse
- River Restoration Workshop – Purdue University, Calumet

Experience

Mr. Poole assists clients with early identification of environmental issues; development of alternatives to minimize environmental impact; coordination with regulatory agency personnel; preparation and submittal of permit applications; and development of environmental mitigation measures.

Mr. Poole has developed an understanding of the technical and regulatory aspects of environmental projects during his 22 years of experience in the environmental field. His experience has included:

- Biological surveys, including threatened and endangered species surveys and impact evaluations;
- Endangered Species Act consultation and biological assessments;
- Ecological risk assessment;
- Native species planting plans;
- Natural resource and habitat restoration plans;
- Wetland investigations;
- Non-metallic mine reclamation plans; and
- National Environmental Policy Act documentation (EA and EIS).

Project Experience

- Prairie du Sac Hydroelectric License Compliance, Prairie du Sac, WI – Coordinate consultation with specified resource agencies, develop environmental compliance and monitoring plans for operation compliance, aquatic species protection and recreation enhancements.
- American Transmission Company – Utility corridor environmental analysis. Conduct evaluations of potential impacts to state and federal listed species including habitat identification and quantification, NHI database review and species specific analysis. Develop species-specific construction protection protocols. Coordinate field studies to verify the impact analysis.
- Utility Corridor and Communication Tower Development Projects - Conduct Karner blue butterfly habitat assessments and population surveys.
- Weyerhaeuser Hydroelectric License Compliance, Rothschild, WI – Coordinate consultation with specified resource agencies and develop management and monitoring plans for purple loosestrife, osprey nest structures and wildlife habitat.
- Residential, Commercial and Utility Development Projects, Southeast Wisconsin – Conduct Butler's gartersnake (Butler's) habitat assessments and develop Butler's habitat conservation plans for agency concurrence and approval
- EcoEnergy, Calumet County, WI – Develop and implement environmental resources impact assessment strategy for proposed wind energy development project.

William R. Poole
Senior Principal Scientist

Project Experience (Continued)

- Darlington Wind Farm Migratory Bird Impact Assessment, Zilkha Renewable Energy, Darlington, WI. - Participated in resource agency consultation and conducted field surveys to determine potential impacts to migratory birds, including bald eagles, for a proposed wind energy generation facility.
- Morey Airport, (WisDOT), Middleton, WI. Conducted a Phase I Environmental Assessment, evaluated aquatic and wildlife habitat values, and prepared an Environmental Assessment for a proposed runway extension and related airport upgrades on a sensitive site encompassing floodplain and groundwater recharge areas.
- Rock River Aquatic Studies, Riverside Power Project, Rock County, WI – Collected sediment samples for contaminant analysis and collected zooplankton and phytoplankton in the vicinity of a proposed warm-water discharge. In addition, characterized substrate composition, conducted bathymetric mapping of the river and recorded and assessed wildlife and associated habitat including potential impacts.
- Threatened and Endangered Species Assessment, Sherry Power Project, Wood County, WI – Assessed existing habitat on property proposed for development of a new electric power plant. Also, in coordination with the Wisconsin Department of Natural Resources, assessed the potential for certain threatened and endangered species to be present at the site and assessed the potential of project-related impacts.
- Wetland Studies, Perrier Group of America, Adams County, WI – Assisted with wetland vegetation surveys, rare butterfly surveys, installation of wetland groundwater monitoring wells, and conducting stream flow measurements.
- Milwaukee to Madison Passenger Rail Corridor Study, WisDOT, Wisconsin. Inventoried wildlife and rare/endangered resources within a proposed 80-mile high-speed rail corridor. Assessed and summarized potential environmental impacts of the proposed project.
- U.S. Highway 12, Middleton to Sauk City, WI, Threatened and Endangered Species Survey - Conducted field surveys for threatened and endangered reptiles and amphibians along the proposed highway relocation corridor and prepared a summary report of findings.
- Hydroelectric license compliance, Crystal Falls Hydroelectric Project, City of Crystal Falls, MI. Developed implementation and monitoring plans for wildlife and land management as specified in a new facility operations license. The plan included structures for wood ducks, purple martins, and bats. Developed a bald eagle habitat management plan. Designed and managed the deployment of a fish barrier net.
- Fox River Aquatic Studies, Fox Energy Power Project, Kaukauna, WI – Participated in a baseline study that involved seasonal fyke netting, electrofishing, and weekly ichthyoplankton collection. In addition, characterized riparian habitat, identified aquatic vegetation, assisted with substrate characterization and benthic macroinvertebrate collection.
- Rare vascular plant surveys, Chippewa National Forest, MN – Conducted rare plant surveys on approximately 2,500 acres of forest stands within 3 different ranger districts. Stands surveyed included upland northern hardwoods, bogs, and aquatic communities.
- Wildlife Inventory, Sinnissippi Lake Association, Lake Sinnissippi, WI. - Developed methodology and conducted baseline wildlife inventories as part of an overall lake improvement project. Surveys included migratory and resident waterfowl and song birds, herons, cormorants, and amphibians. The subsequent summary report included management and long-term monitoring recommendations.

Presentations and Publications

Poole, W.R. and R. Krueger, “Strategies for Compliance with Endangered Species Laws in Southeast Wisconsin”, Metropolitan Builders Association Education Seminar, May 2004.

Poole W.R., “Quality Deer Management Principals”, Aldo Leopold Day Event, March, 2007.

Professional and Environmental Memberships

- Quality Deer Management Association
- Natural Resource Foundation of Wisconsin



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Jeffrey D. Kraemer, W.P.I.T
Associate Principal Scientist

Education

M.S. – Biological Sciences, Emphasis in Wetland Ecology, UW – Milwaukee 2003

B.S. – Biological Science, Emphasis in Aquatic Biology UW – La Crosse 1999

Employment Experience

Principal Scientist – NRC, Inc. 2003 to present

Project Assistant – UW – Milwaukee, Biological Research Field Station 1999 to 2003

Wetland Ecologist – Wetland Ecology and Restoration Consulting 2002 to 2003

U.S. Army Corps of Engineers – St. Paul District Regulatory Branch 2002

Professional Achievement

Assured Wetland Professional – WDNR Wetland Delineation Professional Assurance Initiative

Wetland Professional in Training - Society of Wetland Scientists

Professional Development

- Environmental Corridor Delineation Workshop, Southeastern Wisconsin Regional Planning Commission (SEWRPC).
- Wetland Delineation Training Workshop, UW-La Crosse (Continuing Education and Extension).
- Identification of Sedges Workshop, UW-Milwaukee.
- Vegetation of Wisconsin Workshop, UW-Milwaukee.
- Wetland Soils and Hydrology, Wetland Training Institute.
- Karner Blue Butterfly Effectiveness Monitoring Certification Course.

Professional Memberships

- Wisconsin Wetlands Association
- Society of Wetland Scientist
- Blue Mounds Area Project
- Lake Koshkonong Wetlands Association

Experience

Mr. Kraemer is an environmental scientist with a strong background in environmental regulations, specializing in wetland ecology and botany. Mr. Kraemer is an assured wetland professional through the WDNR Wetland Delineation Professional Assurance Initiative and has 7 years of professional experience working with the local, state, and federal regulatory agencies and has extensive environmental consulting experience as a field scientist and project manager. Mr. Kraemer has a thorough understanding of the technical and regulatory aspects of environmental projects. His experience includes:

- Project critical issues analysis/permitting feasibility assessments;
- Wetland investigations, mitigation planning, and permitting;
- Vegetation surveys and mapping;
- Natural resource and habitat restoration planning;
- Endangered Species Act studies and consultation; and
- National Environmental Policy Act documentation (EA/EIS).

Project Experience

- Ameren Corporation Transmission Line Projects: LaSalle-Ottawa, LaSalle County, IL; Wood River Refinery, Madison County, IL; Rockwood-Big River, Jefferson County, MO; Saddle Creek 73, Franklin County, MO. Managed support for environmental and GIS services to gain regulatory approvals for new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, community advisory and public workshop support, and expert witness testimony.
- Ashley Furniture Industries Expansion Project, Arcadia, WI. Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland fill application for expansion of the facility; continue to monitor and coordinate implementation of mitigation plan.
- Wis-DOT Threatened Plant Species Consultation, Port Wing, WI. Completed comprehensive study of a threatened plant species population in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring.
- Wis-DOT, Neptune Wetland Mitigation Monitoring, Richland County WI. Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation site.
- Berlon Industries Expansion Project, Hustisford, WI. Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.
- Country View Estates Development Project, DeForest, WI. Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.
- Badger Prairie Health Care Center Expansion Project, Verona, WI. Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

Jeffrey D. Kraemer, W.P.I.T
Associate Principal Scientist

Project Experience (Continued)

- Enbridge, Inc. Southern Access Expansion Project, Wisconsin – Crude Petroleum Pipeline Project. Completed wetland delineations and habitat assessments along a 343 mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy’s Southern Access Expansion Program.
- American Transmission Company Arrowhead to Weston, Wisconsin – 345 kV Transmission Line Project. Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208 mile proposed new transmission line.
- Wisconsin Public Service Corporation New Gas Pipeline Project, Wausau, WI. Completed environmental surveys along proposed gas pipeline corridor including environmental assessments, threatened and endangered plant species survey, and identification of wetland and upland community types.
- Midwest Generation Waukegan Power Generation Facility Expansion Project, Lake County, IL. Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the facility.
- Midwest Generation Waukegan Power Station, Waukegan, IL. Provided threatened and endangered species consultation and surveying along Lake Michigan shorelines for permitting a dredging activity.
- Alliant Energy Nelson Dewey Power Generation Facility Expansion Project, Caseville, WI. Completed field evaluations of wetlands in preparation of NEPA documentation for expansion of the facility.
- Alliant Energy, Prairie Du Sac, WI. Conducted a purple loosestrife surveys on Lake Wisconsin shorelines and wetlands in order to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.
- American Transmission Company, WI. Conducted Karner Blue butterfly surveys (federally endangered) along transmission line right-of-ways.
- Fitchburg Northeast Neighborhood Plan, Fitchburg, WI. Developed wetland protection standards for the City of Fitchburg’s NE Neighborhood Plan.
- Windsor Properties II Commercial Development, Windsor, WI. Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the commercial development project.
- Conway Central Express Expansion Wetland Permitting, Franklin, WI. Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.
- Wesenberg Development, New Glarus, WI. Conducted threatened and endangered plant species surveys, wetland delineations, and floristic quality assessment in support of the residential development.
- Westwynde Development, Sun Prairie, WI. Completed wetland delineation/evaluations, wetland permitting, wetland mitigation planning, and upland prairie restoration planning in support of the residential development.
- Westshore Development Restoration Design, Oconomowoc, WI. Designed a 30-acre upland habitat enhancement and wetland restoration plan in support of gaining regulatory approvals for residential development.
- Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, WI. Developed and conducted wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands.
- Fitchburg Technology Campus, Fitchburg WI. Completed woodland assessment, tree survey, and woodland restoration and management plan in support of retail and commercial development project.
- Wis-DOT, Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, WI. Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre mitigation site.
- Wis-DOT, Jug Creek Wetland Mitigation Monitoring, Vernon County, WI. Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 10-acre mitigation site.
- Morrison Creek Cranberry Company, Wetland Mitigation Bank Monitoring and Remediation, Oakdale, WI. Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.
- Samuelson Fen Restoration, Portage, IN. Developed restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.
- Cedarburg Bog State Natural Area Management Planning, Saukville, WI. Developed and implemented management plans for invasive species control.

Jeffrey D. Kraemer, W.P.I.T
Associate Principal Scientist

Publications/Presentations

Management of the Eastern Prairie Fringed Orchid in the Lake Koshkonong Wetlands. Lake Koshkonong Wetland Association. Rock County, Wisconsin, 2006.

Lake Koshkonong Wetlands: Diversity, Floristic Quality, and Community Mapping. Lake Koshkonong Wetland Association Jefferson, Rock, and Dane Counties, Wisconsin, 2006.

Lake Koshkonong Water Levels and Growth Rate of Trees in Bordering Floodplain Forests. Lake Koshkonong Wetland Association. Jefferson County, Wisconsin. 2005.

Lake Koshkonong Water Level Controversy: A Balance between Recreation and Wetland Protection, WWA Annual Science Forum, Presentation, 2005.

Floodplain forest hydrology and management implications: Lake Koshkonong as a case study. Wisconsin Wetlands Association, Annual Science Forum, Presentation 2004.

Using wetland plants as indicators of fine scale variation in hydrology: the plant community-environment relationship in sedge meadows, Master's Thesis defense, 2003.

Effects of invasive plant species on natural communities, UW-Milwaukee, Biology Dept., Presentation, 2001.



Neil E. Molstad, CPSS/PSS *Environmental Scientist/Soils*

Education

M.S. – Soil Science, Iowa State University, 2000
B.A. – Biology, Texas A&M University, 1997

Employment Experience

Environmental Scientist/Soils - NRC, Inc.
2005 to present

Soil Scientist, USDA-NRCS
2003 to 2005

Soil Scientist, V3 Consultants, Inc.
1999 to 2003

Graduate Research Assistant, Iowa State University
1997 to 1999

Professional Achievement

Certified Professional Soil Scientist (CPSS)/Certified Professional Soil Classifier (CPSC) -
American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS)

Wisconsin Licensed Professional Soil Scientist #201 (PSS)

Professional Development

- Wetland Delineation Field Course, Institute for Wetland & Environmental Education and Research
- S-130/S-190 Wildland Firefighter Training, Wheaton IL Park District
- Essential Microstation, The Itasca Group
- Introduction to ArcView, Northern Illinois University
- S-290/S-390 Wildland Firefighter Training, The Nature Conservancy
- Soil Geomorphology Field Trip of Minnesota, Soil Science Society of America
- Soil Geomorphology Field Trip of North Carolina, Soil Science Society of America
- Soil Correlation Course, USDA-NRCS

Experience

Mr. Molstad is a licensed and certified professional soil scientist who assists clients with early identification of environmental issues, specializing in soil evaluation, landscape interpretation, and wetland delineation.

His experience includes:

- Wetland delineations and permitting;
- Soil mapping/classification and subsurface evaluations;
- Conducting activities relating to natural area management, including prescribed burning and brush control;
- Erosion control monitoring and management; and
- Environmental outreach.

Project Experience

- American Transmission Company utility corridor wetland assessments and threatened/endangered/invasive species surveys: Darien to Delevan, Walworth County, WI; Dodge County Reliability Project, Dodge County, WI; Paddock to Rockdale, Dane and Rock Counties, WI; Arrowhead to Weston, Douglas to Marathon Counties, WI; Arpin-Rocky Run Upgrade, Wood and Portage Counties, WI.
- Enbridge, LLC - Southern Access Expansion Pipeline, Stages I and II, Douglas to Rock Counties, WI: Conducted wetland/waterway delineations using GPS technology; Worked with surveyors to stake the wetland boundaries and buffers; Reviewed data and wrote finalized report for Stage II.
- Green Lake and Fond du Lac Counties/DOT – State Highway 23 Reconstruction Project: Conducted wetland investigations within the road right of way and developed report for submittal to the WDNR and ACOE.
- Douglas County/DOT – U.S. Highway 2 Reconstruction Project, U. S. Highway 53 to Poplar: Conducted wetland investigations within both existing and proposed road right of ways.
- DuPage County IL. Brewster Creek Wetland: Wetland delineation and detailed soil mapping conducted for the DuPage County Forest Preserve District to aid in restoration planning for the wetland.
- Dane County, WI. Hiese Property: Conducted a wetland delineation along with a soil and subsurface evaluation; wrote and submitted finalized reports for both activities.
- Cook County IL. Santa Fe Prairie: Detailed soil mapping conducted within the prairie to determine the extent of natural and fill soils for future restoration activities.
- Lake County IN. Various parcels: Conducted a wetland delineation on approximately 600 acres of abandoned industrial land in Gary, IN, as a precursor for planned redevelopment.
- Samuelson Fen Restoration, Portage, Indiana. Assisted with coordination and implementation of a prescribed burn for the project site.

Neil E. Molstad

Environmental Scientist/Soils

Publications/Presentations

Janisch, J. E., and **N. E. Molstad**. 2004. Disturbance and the three parameters of wetland delineation. *Wetlands*. 24 (4): 820-827.

Lemus, R., E. C. Brummer, K. J. Moore, **N. E. Molstad**, C. L. Burras, and M. F. Barker. 2002. Biomass yield and quality of 20 switchgrass populations in southern Iowa, USA. *Biomass and Bioenergy* 22: 433-442.

Professional and Environmental Memberships

- Soil Science Society of America
- Wisconsin Society of Professional Soil Scientists

David C. Roberts
Soil Investigations, LLC
W5555 Gema Rd
Pardeeville, WI 53954
608-429-3887

EDUCATION:

- BS degree in History from UW-Madison, 1967.
- BS degree in Natural Resources, Soil Science Major, from UW-Madison, 1974.

PROFESSIONAL REGISTRATIONS AND CERTIFICATIONS:

- State of Wisconsin certified Professional Soil Scientist
- State of Wisconsin Certified Soil Tester
- ARCPACS Certified Soil Scientist

EMPLOYMENT:

- Current: Owner, Soil Investigations, LLC
- Previous: Retired from the USDA-Natural Resources Conservation Service as the Area Resource Soil Scientist and Wetland Specialist for the Southeast Area in Wisconsin.

EXPERTISE:

- Soil Survey activities including soil interpretations and soil mapping.
- USDA wetlands policy, procedures, and hydric soils.

EXPERIENCE:

- Provided planning agencies, interested environmental groups, and others with soil interpretations to assist them in evaluating agricultural soil quality; in delineating wetlands and in determining areas for wetland restoration; in assessing soil properties pertinent to building sites; and in rating soil potential for on-site sewage disposal based on Wisconsin Department of Commerce code.
- Provided hydric soils expertise for Food Security Act, Clean Water Act, and state wetland regulatory purposes.
- Provided soils training to NRCS, County Land Conservation Departments, and state agencies in basic soil science, soil interpretations, and geomorphology. Provided hydric soil training to Department of Administration participants in their, "Basic Wetland Delineation Training Workshops." Participants included agency personnel, consultants, and county zoning administrators.
- Served on interdisciplinary teams as a soils expert to address natural resource problems. For example, developed a soil interpretation map of the Pheasant Branch watershed in Dane County showing substratum permeability as related to groundwater recharge.
- Provided soils technical assistance to county Land Conservation Departments and Natural Resources Conservation Service field offices. This included soil on-site evaluations for manure storage facilities, hydric soil evaluations for wetland delineations, and other soil information and interpretations.