Rare Species and Natural Features Assessment of Buckeye Partners, LP Bulk Storage Terminal Expansion Project

2303 S 3rd Street, Niles, Berrien County, MI

Prepared for PW Grosser Consulting

Prepared by:
Tyler Bassett and Michael A. Sanders
Michigan Natural Features Inventory
Lansing, Michigan

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Introduction

In September 2019, Michigan Natural Features Inventory (MNFI) contracted with PW Grosser Consulting (PWGC) of Saratoga Springs, New York to conduct a rare species and natural features assessment of a parcel located at 2303 South 3rd Street, Niles, Berrien County, MI (T08S R17W Section 11) (Figure 1). PWGC requested this rare species and natural features assessment on behalf of the property owner, Buckeye Partners, LP (BP). BP operates a bulk storage facility at the site and plans on expanding the facility beginning in the fall of 2019. Site improvements include relocating an offload, adding a new driveway and making other internal improvements. MNFI assessed the project site to determine the presence or potential habitat of the state threatened (ST) prairie trillium (*Trillium recurvatum*) and the state special concern (SC) Davis's sedge (*Carex davisii*). MNFI also recorded observations of any rare species encountered during our survey. This report summarizes the methods and findings of our assessment.

Methods

MNFI conducted a field survey of the project site on October 13, 2019, to determine if the area contains suitable habitat and could possibly support the target species. The survey (i.e., random meander search) consisted of an MNFI scientist walking through the project site. It should be stressed that the survey date fell outside the optimal survey window that would provide the field surveyor a reasonable opportunity to observe and to accurately assess the suitability of habitat for the target species, and most other T&E species with the potential to occur on site.

The ST prairie trillium is found in southwestern Lower Michigan floodplains and mesic forests, especially in moist ravines, rich moist woods and bluffs and is most frequent on limestone derived soils. Prairie trillium is best sought when in flower, which typically occurs from early May to early June in Michigan. Flowers are relatively long-lasting, and plants can also be identified any time during the early growing season by their mottled leaves. This species is threatened by forest fragmentation and habitat destruction. Other concerns include invasive species, logging and over browsing by dear.

The SC Davis's sedge occurs primarily in first and second bottoms of floodplain forests in southern Lower Michigan, especially in canopy gaps and artificial clearings including riparian thickets and fields. Flowering occurs late-May through June. This species is threatened by forest fragmentation and habitat destruction.

The parcel is comprised of a small woodland. In general, conditions are indicative of anthropogenic disturbance, although the site supported a mature canopy of native trees appropriate to the forests of the region. The southern "leg" of the parcel is slightly lower in the landscape, very disturbed and densely dominated by invasive exotic shrubs (Figure 2). The northern "leg" is situated on a slight ridge (Figure 3), and supports a mix of native and non-native species, including a small remnant community of savanna species (Figure 4). Furthermore, portions of the woodland outside of the indicated footprint are adjacent to what was historically a railroad right-of-way, which was recently converted into a paved biking trail (Figure 5). Railroad rights-of-way in southwestern Michigan often support rare populations of species associated with the prairie and savanna habitats that once dominated the region. As such the eastern margin of the woodland has the potential to support such populations. A more detailed description of the vegetation is found under the "Findings" Section.

Findings

The woodland contained many native species, both in the canopy and understory, but was overall very disturbed and low-quality. The canopy was dominated by black oak (*Quercus velutina*; 50%), with

codominant species including wild black cherry (*Prunus serotina*; 20%) and sassafras (*Sassafras albidum*; 15%). Pignut hickory (*Carya glabra*; 5%) was present at low density in the canopy. These are typical dominant species of dry-mesic southern forest (oak-hickory) in Michigan. The soils were loamy sand, typical for oak-dominated upland forests of this region. There was also a monotypic patch of the highly invasive exotic tree species, tree-of-heaven (*Ailanthus altissima*; 10%) in the southeast corner of the site.

The understory was dominated by disturbance-adapted, invasive shrubs such as honeysuckles (especially *Lonicera maacki* (see Figures 2, 3 and 6), but including *L. morrowii*), Oriental bittersweet (*Celastrus orbiculatus*), and common privet (*Ligustrum vulgare*); oak and hickory seedlings and saplings were present at low densities in the understory (Figure 4).

The ground layer was sparse in areas dominated by invasive shrubs. However, some portions of the ground layer supported a diverse native community of prairie and savanna species. These species require greater light availability than is generally afforded on the forest floor. This small community of species included several species that are sensitive to anthropogenic disturbance and are likely persisting in an old tree row that has significant light exposure. Western sunflower (*Helianthus occidentalis*) (Figure 7), wild lupine (*Lupinus perennis*), hoary puccoon (*Lithospermum canescens*) (Figure 8), little bluestem (*Schizachyrium scoparium*), and butterflyweed (*Asclepias tuberosa*) are notable examples.

No at-risk plant species were observed during the survey. The potential for this parcel to support any of the target plant species is low, at least within the development footprint indicated on the provided maps. Prairie trillium and Davis' sedge are generally associated with moister forests than occurred at the site. Although they both occasionally occur in drier conditions, the very sandy soil at the site would not likely support either species.

There is potential for this site to support T&E plant species associated with prairie and savanna habitats, although such species require greater light availability than was observed at most of the site. Prairie and savanna species are often limited in occurrence to the edges of woodlands, particularly along the margins of former rail beds (Figure 5). Also, several additional T&E prairie and savanna species have been documented in close proximity to the site. Since the survey occurred so late in the growing season, we cannot conclusively rule out the presence of all T&E species at this site.

Acknowledgements

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Relevant Literature

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Lee, J.G. 2007. Natural community abstract for dry-mesic southern forest. Michigan Natural Features Inventory, Lansing, MI. 16 pp.

Michigan Natural Features Inventory. 2019. Michigan's Rare Plants and Animals. Available online at https://mnfi.anr.msu.edu/species [Accessed October 10, 2019].

List of plant species observed (continued on next page)

Scientific Name	Common Name	Physiognomy	Duration
Acer rubrum	red maple	tree	perennial
Ailanthus altissima	**tree-of-heaven**	tree	perennial
Alliaria petiolata	**garlic mustard**	forb	biennial
Ambrosia artemisiifolia	common ragweed	forb	annual
Amelanchier laevis	smooth shadbush	tree	perennial
Aristida purpurascens	three-awned grass	grass	perennial
Asclepias tuberosa	butterfly-weed	forb	perennial
Asplenium platyneuron	ebony spleenwort	fern	perennial
Campsis radicans	**trumpet-vine**	vine	perennial
Carex muehlenbergii	sedge	sedge	perennial
Carex pensylvanica	sedge	sedge	perennial
Carya glabra	pignut hickory	tree	perennial
Celastrus orbiculatus	**oriental bittersweet**	vine	perennial
Centaurea stoebe	**spotted knapweed**	forb	biennial
Chimaphila maculata	spotted wintergreen	shrub	perennial
Danthonia spicata	poverty grass; oatgrass	grass	perennial
Dianthus armeria	**deptford pink**	forb	annual
Dichanthelium implicatum	panic grass	grass	perennial
Dichanthelium oligosanthes	panic grass	grass	perennial
Euonymus alatus	**winged euonymus**	shrub	perennial
Euphorbia corollata	flowering spurge	forb	perennial
Euthamia graminifolia	grass-leaved goldenrod	forb	perennial
Galium circaezans	white wild licorice	forb	perennial
Galium pilosum	hairy bedstraw	forb	perennial
Helianthus occidentalis	western sunflower	forb	perennial
Hieracium gronovii	hairy hawkweed	forb	perennial
Hypericum perforatum	**common st. johns-wort**	forb	perennial
Juniperus virginiana	red-cedar	tree	perennial
Lespedeza capitata	round-headed bush-clover	forb	perennial
Ligustrum vulgare	**common privet**	shrub	perennial
Lithospermum canescens	hoary puccoon	forb	perennial
Lonicera maackii	**amur honeysuckle**	shrub	perennial
Lonicera morrowii	**morrow honeysuckle**	shrub	perennial
Lupinus perennis	wild lupine	forb	perennial
Morus alba	**white mulberry**	tree	perennial
Pinus strobus	white pine	tree	perennial
Poa compressa	**canada bluegrass**	grass	perennial
Prunus serotina	wild black cherry	tree	perennial
Quercus alba	white oak	tree	perennial
Quercus muehlenbergii	chinquapin oak	tree	perennial
Quercus velutina	black oak	tree	perennial
Rosa carolina	pasture rose	shrub	perennial

Scientific Name	Common Name	Physiognomy	Duration
Rubus flagellaris	northern dewberry	shrub	perennial
Rudbeckia hirta	black-eyed susan	forb	perennial
Sassafras albidum	sassafras	tree	perennial
Schizachyrium scoparium	little bluestem	grass	perennial
Silene coronaria	**mullein pink**	forb	perennial
Smilax ecirrata	upright carrion-flower	forb	perennial
Solidago juncea	early goldenrod	forb	perennial
Solidago nemoralis	old-field goldenrod	forb	perennial
Symphyotrichum pilosum	hairy aster	forb	perennial
Tridens flavus	purpletop	grass	perennial
Vitis aestivalis	summer grape	vine	perennial

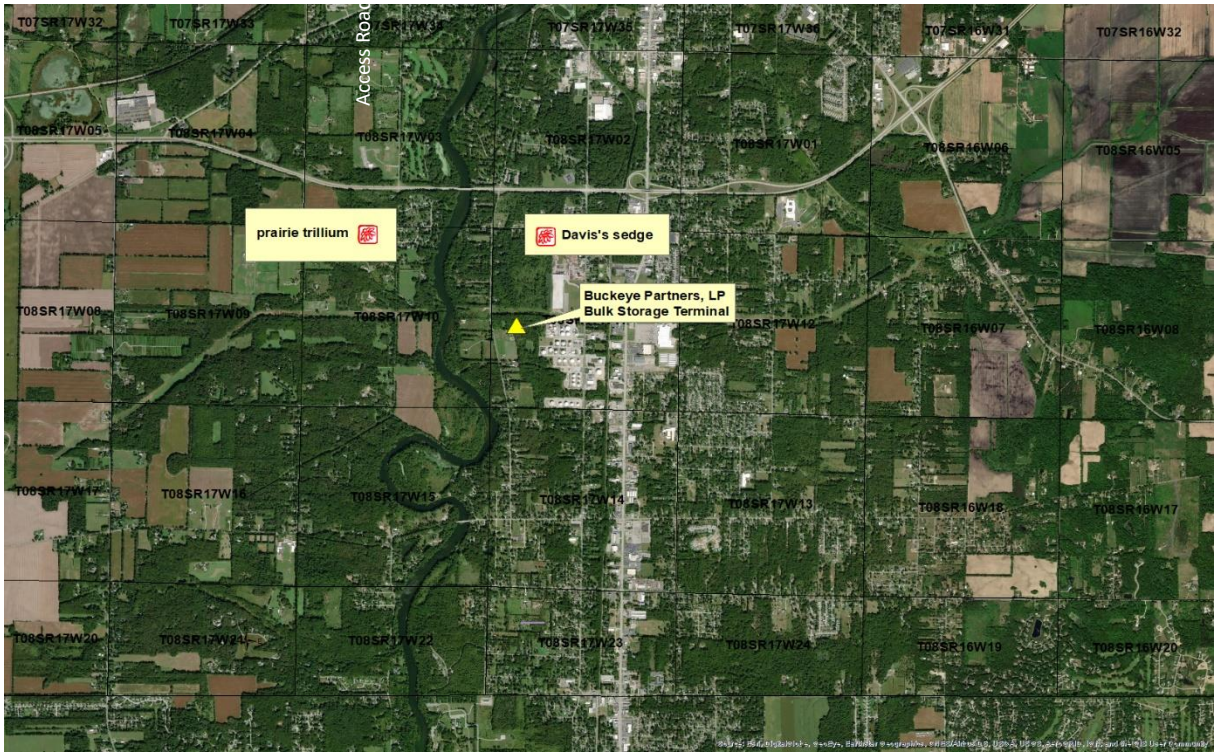

Figure 1*. MNFI performed Rare Species and Natural Features Assessment at Buckeye Partners, LP Bulk Storage Facility located in Niles, Berrien County, MI (T08SR17WS11).*

Figure 2. *The southern "leg" of the parcel is slightly lower in the landscape, very disturbed and dominated by invasive exotic shrubs (taken 13 October 2019).*

Figure 3. *Northern "leg" of survey area, with young pignut hickory and sassafras saplings in the foreground, a canopy of black oak in background, and the red fruits of Amur honeysuckle notable (taken 13 October 2019).*

Figure 4. *Small community of native savanna species, along south-facing edge of north "leg" of survey area, with black oak and pignut hickory seedlngs on both the left and right of the frame (taken 13 October 2019).*

Figure 5. *Margin of adjacent bike path, a fomer railroad right-of-way, which still supports native prairie vegetation (taken 13 October 2019).*

Figure 6*. Invasive shrub Amur honeysuckle (taken 13 October 2019).*

Figure 7. *Native prairie and savanna speices, Western sunflower (taken 13 October 2019).*

Figure 8. *Native prairie and savanna speices, hoary puccoon (taken 13 October 2019).*