

Grassland and Skipper Habitat Assessment Memorandum



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TECHNICAL MEMORANDUM

DATE: 25 September 2018

FROM: Western EcoSystems Technology, Inc. (WEST; Jennifer Stucker, Todd Mattson)

TO: Flying Cow Wind, LLC (Anne-Marie Griger, Sean Flannery)

RE: Grassland and Skipper Habitat Assessment within the Bitter Root Wind Farm Transmission Line Corridor, Deuel County, South Dakota

PROJECT BACKGROUND

Flying Cow Wind, LLC is developing a 10.42-mile long, 345-kilovolt electrical transmission line from the proposed Bitter Root Wind Farm (Project) in Yellow Medicine County, Minnesota to an interconnect at the Astoria Station in Deuel County, South Dakota. Western EcoSystems Technology, Inc. (WEST) provided technical assistance identifying, through desktop evaluation and field assessment, potential areas of sensitive terrestrial natural resources, concentrating on native grasslands and migratory birds. WEST followed the desktop evaluations with a ground-based field assessment of specific grassland habitats. The goal of the field assessment was to assess the condition and quality of previously classified sensitive grasslands and native prairie habitats in the Project area (which includes the power line route through Scandinavia and Norden townships) by 1) evaluating areas of suspected native grassland and assessing prairie quality and condition including dominant species of native grasses, forbs, and invasive plants, and 2) assessing if these habitats might be suitable for Dakota skipper (federally threatened; *Hesperia dacotae*) and Poweshiek skipperling (federally endangered; *Oarisma poweshiek*). The desktop assessments were completed in June and again in August 2018. Initial field assessments were conducted on June 14, 2018, with follow-up grassland condition surveys on August 22, 2018. This memo summarizes the results of the desk-top and field assessments, including incidental wildlife observations.

METHODS

The goal of the survey was to identify areas of native prairie to maximize avoidance of these areas during planning for construction of the transmission line. Prairie remnants provide important habitat for the Dakota skipper and Poweshiek skipperling, federally listed butterflies that are associated with wet to dry native prairies that have not been plowed; these butterflies are typically not found in overgrazed and degraded prairie (US Fish and Wildlife Service [USFWS] 2015). Habitats dominated by non-native grass are not suitable for these species (USFWS 2015, Minnesota Department of Natural Resources 2016). Because most skippers

(Family: Hesperiiidae, which includes both the Dakota skipper and the Poweshiek skipperling) spend their whole life cycle in one prairie patch, impact avoidance within these patches that contain these species is recommended given the protections afforded under the Endangered Species Act (1973).

For the desktop assessment, we used true-color satellite imagery, in conjunction with the South Dakota State University (SDSU) Extension's Potentially Undisturbed Lands layer (Bauman et al. 2016). We visually inspected each location where ground disturbance is planned for installation of a post/tower or guy-lines. For five locations within or adjacent to undisturbed land areas where ground disturbance is planned, a botanist conducted additional grassland condition sampling following methods by Vacek and colleagues with The Nature Conservancy, the USFWS, and the Minnesota Department of Natural Resources (Vacek et al. 2012), except that sampling was centered within the proposed disturbance area. This grassland condition sampling approach focuses on the presence and dominance of invasive and native species, documenting the presence of quality prairie species as an indication of its potential for restoration and dominance of invasive species as an indication of ecological impairment, and likely prior disturbance at the location.

RESULTS

A desktop-based visual inspection of each structure, 84 poles, and 1 substation, indicated that 77 (91%) of the 85 planned structures composed of, were located on land with evidence of disturbance or cultivation based on satellite imagery. We closely assessed nine pole locations where transmission line structures were located in areas either identified as previously undisturbed lands (PUDL; 8 poles) or were within a unit contiguous to PUDL (Structure 13) and the vegetation retained a similar visual pattern (Figure 1, Table 1). Five of the structures (4 in PUDL) in contiguous grassland were surveyed by a botanist following the Grassland Condition sampling, with one additional qualitative assessment at Structure 29 following a layout change; photos used by the botanist were taken during a June 2018 roadside survey of the route (Figure 2). Of the sites assessed in the field, none of the Tier 1 Native species (Vacek et al. 2012) were documented. These sites did have an abundance of Tier 1 Invasive species, including brome (*Bromus inermis*), reed canary-grass (*Phalaris arundinacea*), sweet clovers (*Melilotus alba* and/or *M. officinalis*), Canada thistle (*Cirsium arvense*), Kentucky bluegrass (*Poa pratensis*), white clover (*Trifolium repens*), and green ash (*Fraxinus pennsylvanica*). Three of the structures (#54, 75, and 77) were within 1 meter of the edge of a PUDL areas, and each had evidence of cultivation (#54, #75), or abutted a previously disturbed fence and electrical distribution pole (#77) Figure 2b.

Based on this analysis, none of the 85 planned structure sites had vegetation communities of upland or wet meadow, including native prairie grasses and preferred forbs, that are consistent with Dakota skipper or Poweshiek skipperling habitats.

Table 1. Bitter Root Wind Farm transmission line structures within, or adjoining, potentially undisturbed lands, and site survey observations.

Structure	Grassland Transect	Potentially Undisturbed Land¹	Evidence of Ground Disturbance at Structure Location	Habitat Type	Plant Group²	# of Tier 1 Native Species³	# of Tier 1 Invasive Species³
7	247	Yes	Yes	old field	130	0	4
8	246	Yes	Yes	old field	130	0	5
10	245	Yes	No	emergent wetland	n/a	n/a	n/a
13	244	No	Yes	old field	130	0	1
29	photo	Yes	Yes	riparian grassland	130	n/a	3
54	n/a	Yes	Yes	cultivated/ woodlot	n/a	n/a	n/a
75	n/a	Yes	Yes	cultivated	n/a	n/a	n/a
77	n/a	Yes	Yes	roadside	130	n/a	n/a
82	242	Yes	Yes	riparian grassland	130	0	4

¹ Based on the South Dakota State University Extension's Potentially Undisturbed Lands Layer (Bauman et al. 2016)

² Grassland Plant group 130 is composed is a grass dominated plant community with >75% grass and <25% forbs (Vacek et al. 2012)

³ Tier 1 species, native and invasive, identified in Vacek et al. (2012)

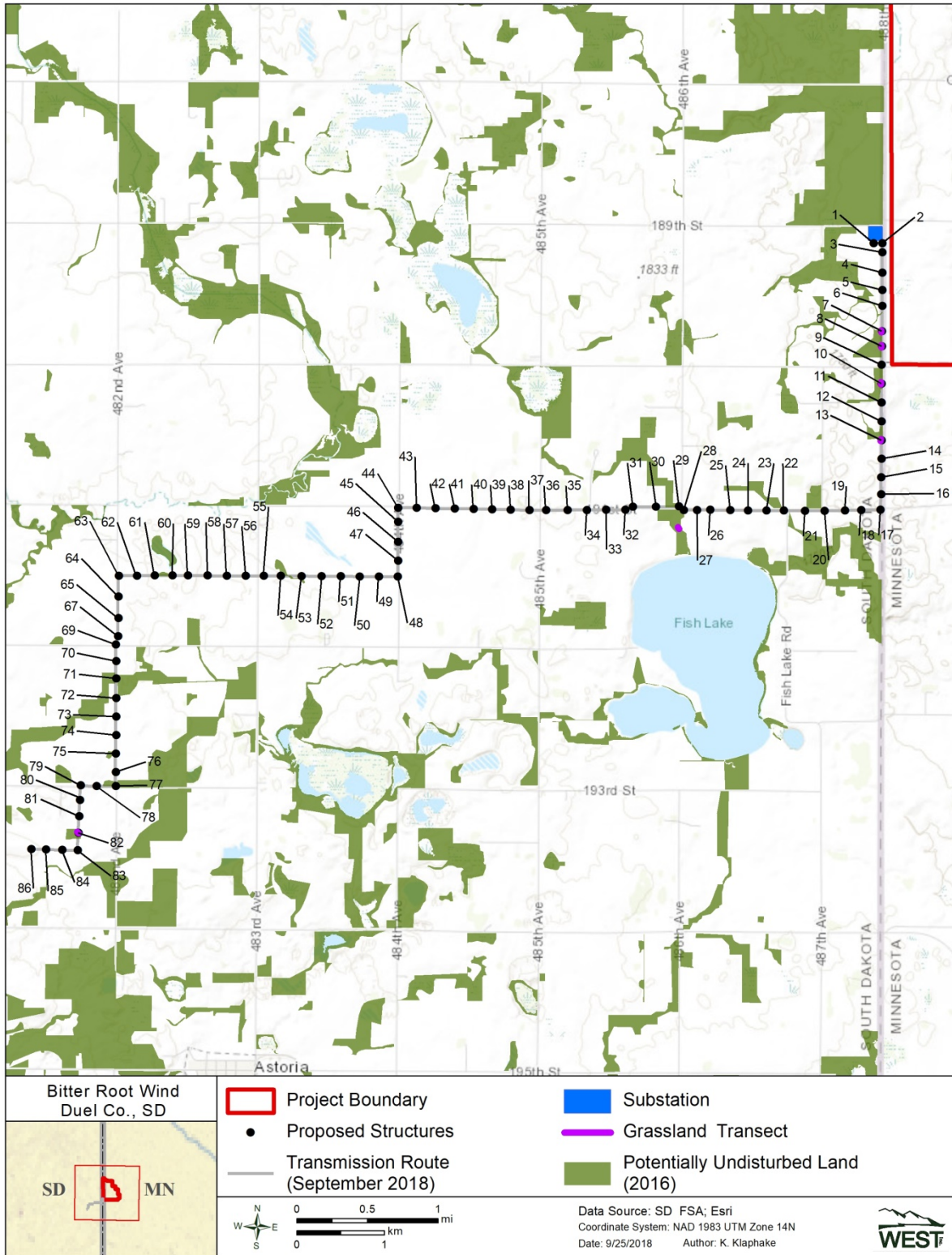


Figure 1. The Bitter Root Wind Farm transmission route (September 2018) in Deuel County, South Dakota with Potentially Undisturbed Land (yellow), grassland transects (purple), and the proposed transmission route (gray) with numbered labels for each structure (black circles).



Figure 2a. Photo from site visit (June 14) at the location of proposed Structure 29 (intersection of 191st Street and 486th Avenue) of Bitter Root Wind transmission route (September 2018) in Deuel County, South Dakota. Site had heavy invasions of Tier 1 invasive species, including reed-canary grass, smooth brome, and green ash trees on the margins; no Tier 1 native species were observed.



Figure 2b. Photo from site visit (June 14) at the location of Structure 77 (intersection of 193rd Street and 482nd Avenue) of Bitter Root Wind transmission route (September 2018) in Deuel County, South Dakota. Site had heavy invasions of Tier 1 invasive species, including smooth brome, Kentucky bluegrass, and Canada thistle, with Russian olive (*Elaeagnus angustifolia*) in the background; no Tier 1 native species were observed.

REFERENCES

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