Appendix D

Dakota Skipper and Poweshiek Skipperline Survey Reports

DAKOTA SKIPPER (*HESPERIA DACOTAE*) AND POWESHIEK SKIPPERLING (*OARISMA POWESHIEK*) SURVEY REPORT FOR THE TATANKA RIDGE WIND PROJECT, DEUEL COUNTY, SOUTH DAKOTA

AUGUST 2018

PREPARED FOR
Buffalo Ridge III, LLC

PREPARED BY

SWCA Environmental Consultants

DAKOTA SKIPPER (*HESPERIA DACOTAE*) AND POWESHIEK SKIPPERLING (*OARISMA POWESHIEK*) SURVEY REPORT FOR THE TATANKA RIDGE WIND PROJECT, DEUEL COUNTY, SOUTH DAKOTA

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August 2018

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1 INTRODUCTION

The Dakota skipper (*Hesperia dacotae*) and Poweshiek skipperling (*Oarisma poweshiek*) are listed as threatened and endangered under the Endangered Species Act, respectively, by the U.S. Fish and Wildlife Service (USFWS). These species are not listed under the South Dakota Endangered Species Law. SWCA Environmental Consultants (SWCA) was contracted by Buffalo Ridge III, LLC (Buffalo Ridge III), a subsidiary of Avangrid Renewables, LLC, to conduct adult presence/absence protocol surveys for these two species for the Tatanka Ridge Wind Project (Project), located in Deuel County, South Dakota (Figure 1). The purpose of the surveys were to meet USFWS guidelines (USFWS 2018) on assessment of the Dakota skipper and Poweshiek skipperling.

The Project is located approximately 5 miles west of the South Dakota/Minnesota border, and directly north of the town of Toronto, South Dakota. The Project boundary encompasses 22,905 total acres (approximately 36 square miles), with over 99% of the Project located on private lands, and less than 1% within the Deuel County Waterfowl Production Area, which is located in the eastern portion of the Project. The proposed Project will have a nameplate capacity of up to 99 megawatts, consisting of wind turbines and associated infrastructure such as access roads, electrical collection system, substation, operations and maintenance building, and a permanent meteorological tower.

Per USFWS (2018) guidelines, a survey area was identified that included the potential infrastructure disturbance area and an 820-foot (250-meter [m]) buffer (Figure 1). A desktop review of the survey area was conducted to identify undisturbed grassland areas that could be potential habitat for the Dakota skipper and Poweshiek skipperling. Pedestrian habitat surveys were conducted within the Project area potential habitat to field-verify suitable habitat for adult Dakota skipper and Poweshiek skipperling. Three rounds of adult protocol surveys for the Dakota skipper and Poweshiek skipperling were conducted in June and July 2018, during the flight period for these two species.

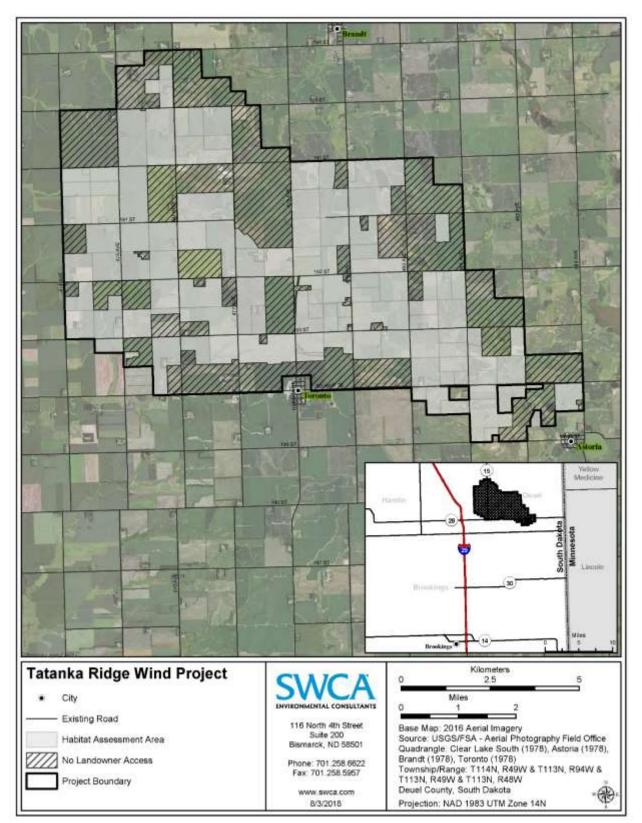


Figure 1. Project overview map.

2 METHODOLOGY

The surveys were conducted in a three-step approach: desktop review, habitat surveys, and adult protocol surveys, in accordance with USFWS (2018) guidelines.

2.1 Desktop Review

A desktop review of the leased lands within the Project was completed in geographic information system (GIS) to identify potential habitat polygons and prioritize areas requiring field verification (Stantec Consulting Services Inc [Stantec] 2018). The desktop review was conducted within areas of the Project boundary where land access was granted (Assessment Area). The Assessment Area is illustrated in Figure 1, above. The desktop review started by importing Buffalo Ridge III's undisturbed grassland layer (Western Ecosytems Technology, Inc 2018; provided to SWCA by Buffalo Ridge III) and reviewing aerial imagery to further refine the layer, where possible, for Dakota skipper and Poweshiek skipperling habitat. The portions of the Assessment Area that appeared to be uncultivated grassland were identified as potential habitat and carried forward for field habitat surveys.

2.2 Habitat Surveys

Habitat surveys were completed by SWCA and Stantec (SWCA subcontractor) biologists to field-verify whether the potential habitat identified during the desktop review was suitable or unsuitable habitat for the Dakota skipper and Poweshiek skipperling. The surveys were completed on all potential habitat areas on leased lands (those identified during the desktop review) where (see maps in Appendix A). The habitat surveys were conducted from June 23 through 28, 2018, by qualified biologists. Suitable habitat determinations were made based on habitat characteristics outlined in the published literature (Rigney 2013; Royer and Marrone 1992a; Royer and Marrone 1992b; Selby 2013; Skadsen 2003; USFWS 2014, 2016, 2018).

Habitat survey field data was used to create a GIS polygon layer of field-verified suitable habitat for the Dakota skipper and Poweshiek skipperling. Field-verified suitable habitat were carried forward for adult protocol surveys (see maps in Appendix A).

2.3 Adult Protocol Surveys

Three rounds of Dakota skipper and Poweshiek skipperling adult protocol surveys were completed in the suitable habitat target areas between June 29 and July 12, 2018, with 48 hours between survey rounds. The surveys were led by Jake Powell, SWCA Senior Ecologist, and Dr. David Lightfoot, SWCA Ecologist, who are both listed on SWCA's Scientific Recovery Permit for the Dakota skipper and Poweshiek skipperling (permit number TE64070B-1).

The adult protocol surveys followed the 2018 Dakota Skipper Survey Protocols (USFWS 2018) as required by the survey request approval from the USFWS South Dakota Field Office (letter sent to Jake Powell, SWCA Senior Ecologist, from Scott Larson, USFWS South Dakota Field Office Field Supervisor, dated June 13, 2018), see Appendix B. The survey fell within the adult flight period of these two species.

SWCA used a modified "Pollard-style random walk" method to conduct the surveys (Royer et al. 1998). The permitted surveyors walked with insect nets at approximately 35 m per minute within the suitable habitat areas. As they walked, the surveyors scanned the area within a 5-m box (5 m on each side, within

5 m of the ground, or 5 m to the front). If identified, only Dakota skippers, or other sensitive butterflies, identified within the box were recorded.

SWCA conducted the surveys between 1000 and 1730 hours (10:00 a.m.–5:30 p.m.) Central Daylight Time. The surveys were conducted within the environmental constraints listed below, as outlined by the USFWS (2018) survey methodology.

- No surveys during fog, drizzle, or rain.
- No surveys when sustained or gusting winds that average greater than 30 kilometers (19 miles) per hour measured over a 30-second period at a height of 1.2 to 1.8 m (4–6 feet) above ground level (Beaufort Scale of 5 or greater).
- No surveys when temperature in the shade at ground level is less than 21 degrees Celsius (70 degrees Fahrenheit) when cloud cover is less than 50% or less than 30 degrees Celsius (86 degrees Fahrenheit) when cloud cover is 50% or more.

One to two additional surveyors worked under direct supervision of Mr. Powell or Dr. Lightfoot during the surveys. The entirety of each target area polygon was covered by the surveyors.

Additional information collected during the surveys included other butterfly species observed (Appendix C) and a general count of flowering plants (Appendix D), as requested by the USFWS (2018).

3 RESULTS AND DISCUSSION

The desktop review resulted in 3,705.0 acres of potential habitat. The potential habitat was field verified from June 23 through 28, and SWCA determined that approximately 41.5 acres was suitable for the two species. These areas are shown on the maps in Appendix A.

Suitable habitat has the potential to be used by the Dakota skipper and Poweshiek skipperling during their larval stages and the adult flight period. Unsuitable habitat includes areas that do not have the potential to be used by the Dakota skipper and Poweshiek skipperling.

The majority of the suitable habitat verified in the survey area was marginal with a lowered potential for maintaining a viable population. These areas had few, scattered nectar species, were small in size area, had poor juxtaposition in relation other suitable habitat polygons, or had a lack of requisite species diversity. These areas primarily had prairie coneflower (*Ratibid columnifera*), occasionally a few stems of purple coneflower (*Echinacea angustifolia*) and native thistle (*Cirsium spp.*), along with scattered pockets of big bluestem (*Andropogon gerardii*). There were populations of the noxious weed musk thistle (*Carduus nutans*) throughout these areas. The sites were primarily dominated by smooth brome (*Bromus inermis*). However, regardless of their marginal nature they were verified as suitable habitat due to the existence of some suitable habitat attributes. Figure 2 is an example of one of these areas that had low diversity



Figure 2. Smooth brome-dominated site, with few prairie coneflowers and native thistle, along with small patches of big bluestem.

A few suitable habitat polygons had fairly representative Type A and Type B habitat, as noted by the USFWS (2016, 2018).

The Type A suitable habitat areas contained smooth deathcamas (*Zigadenus elegans*), pale-spike lobelia (*Lobelia spicata*), Canada goldenrod (*Solidago canadensis*), candle anemone (*Anemone cylindrica*), and few prairie lily (*Lilium philadelphicum*), black-eyed Susan (*Rudbeckia hirta*), and big bluestem (Figure 3). The most representative Type A habitat in the survey area was portions of the field-verified habitat located in the NWNW1/4 of Section 18, Township (T) 113 North (N), Range (R) 48 West (W) and the SWSW1/4 of Section 7, T113N, R48W (see maps in Appendix A). These areas were low-lying flats adjacent to wetlands (see Figure 3).

Type B suitable habitat areas had big bluestem and sideoats grama (*Bouteloua curtipendula*), with an abundance of purple prairie clover (*Dalea purpurea*) with scattered purple coneflower and prairie coneflower (Figures 4 and 5). Some of the Type B habitat had other dominant native species, such as porcupinegrass (*Hesperostipa spartea*) and switchgrass (*Panicum virgatum*). The most representative Type B habitat in the survey area was portions of the field-verified habitat located in the NE1/4 of Section 20, R113N, R48W and NW1/4 of Section 21, R113N, R48W (see maps in Appendix A). These areas were in undisturbed grassland with livestock grazing managed to perpetuate a native plant community (see Figure 4).



Figure 3. Low-lying site with smooth deathcamas, pale-spike lobelia, Canada goldenrod, and candle anemone.



Figure 4. Area dominated by big bluestem, porcupinegrass, and switchgrass, with Aster sp., smooth deathcamas, sideoats grama, purple prairie clover, and few purple coneflower.



Figure 5. Purple coneflower, purple prairie clover, big bluestem, and some little bluestem.

Unsuitable habitat areas were primarily dominated by non-native upland species (e.g., smooth brome, clover [*Trifolium* spp.], orchardgrass [*Dactylis glomerata*], or timothy [*Phleum pratense*]), or in a wetland that did not have requisite Dakota skipper or Poweshiek skipperling plant species. Alfalfa (*Medicago sativa*) was prevalent in many of the unsuitable habitat areas. Some relict native grassland areas had a high composition of porcupinegrass and native forbs, but the requisite Dakota skipper or Poweshiek skipperling plant species were not present. Canada thistle (*Cirsium arvense*) and musk thistle populations were located throughout the survey area. Figures 6, 7, and 8 show examples of these unsuitable habitat areas.

Dakota Skipper (Hesperia dacotae) and Poweshiek Skipperling (Oarisma poweshiek) Survey Report for the Tatanka Ridge Wind Project, Deuel County, South Dakota



Figure 6. Orchardgrass-dominated site.



Figure 7. Smooth brome- and alfalfa-dominated site.



Figure 8. Smooth brome-dominated site with a relict population of porcupinegrass.

Adult protocol surveys were completed in field-verified suitable habitat target areas on June 29 and 30 and July 5, 7, 8, 10, 11, and 12, 2018. The survey dates, the application round, the permitted surveyor leading the surveys, and the weather on those dates are summarized in Table 1. Round 2 surveys on July 7 only surveyed those target areas surveyed on June 29 (first round survey date) to maintain the 48-hour separation of surveys requirement. Round 3 surveys on July 10 only surveyed those target areas surveyed ate) to maintain the 48-hour separation of surveys requirement. Round 3 surveys on July 10 only surveyed those target areas surveyed ate) to maintain the 48-hour separation of surveys requirement. Round 3 surveys on July 11 and 12 only surveyed those target areas surveyed on July 8 (second round survey data) to maintain the 48-hour separation of surveys requirement. Mr. Powell and Dr. Lightfoot surveyed using separate teams on July 7. All portions of the target survey areas were covered by the survey teams during each round and there were 48 hours between the surveys of all areas.

Date	Round	Permitted Surveyor	Weather at Start of Surveys (percent cloudy, degrees Fahrenheit, average miles per hour wind speed)	Weather at End of Surveys (percent cloudy, degrees Fahrenheit, average miles per hour wind speed)			
June 29	1	Jake Powell	10, 85, 12	15, 92, 7			
June 30	1	Jake Powell	20, 72, 4	30, 75, 3			
July 5	1	Jake Powell	20, 78, 5	30, 91, 7			
July 7	2	David Lightfoot	90, 86, 19	95, 86, 19			
July 8	2	Jake Powell, David Lightfoot	30, 85, 16	10, 87, 15			
July 10	3	David Lightfoot	45, 70, 15	60, 88, 15			
July 11	3	David Lightfoot	50, 88, 16	25, 91, 15			
July 12	3	David Lightfoot	50, 77, 9	40, 78, 9			

Table 1. Survey Rounds

No Dakota skippers or Poweshiek skipperlings were observed during any of the three rounds of adult protocol surveys. Based on the USFWS (2018) guidelines, the 41.5 acres of suitable habitat where adult protocol surveys were conducted would be considered 'not occupied'.

Summary

This is a summary of the results:

- The desktop review resulted in 3,705.0 acres of potential habitat being identified.
- Habitat surveys were conducted from June 23 through June 28, 2019.
- The habitat surveys field-verified 41.5 acres of suitable habitat for the Dakota skipper and Poweshiek skipperling.
- Three rounds of adult protocol surveys were conducted on the 41.5 acres of suitable habitat from June 29 through July 12, 2018.
- No Dakota skippers or Poweshiek skipperlings were observed during the adult protocol surveys.
- Based on the USFWS (2018) guidelines, the 41.5 acres of suitable habitat where adult protocol surveys were conducted would be considered 'not occupied'.

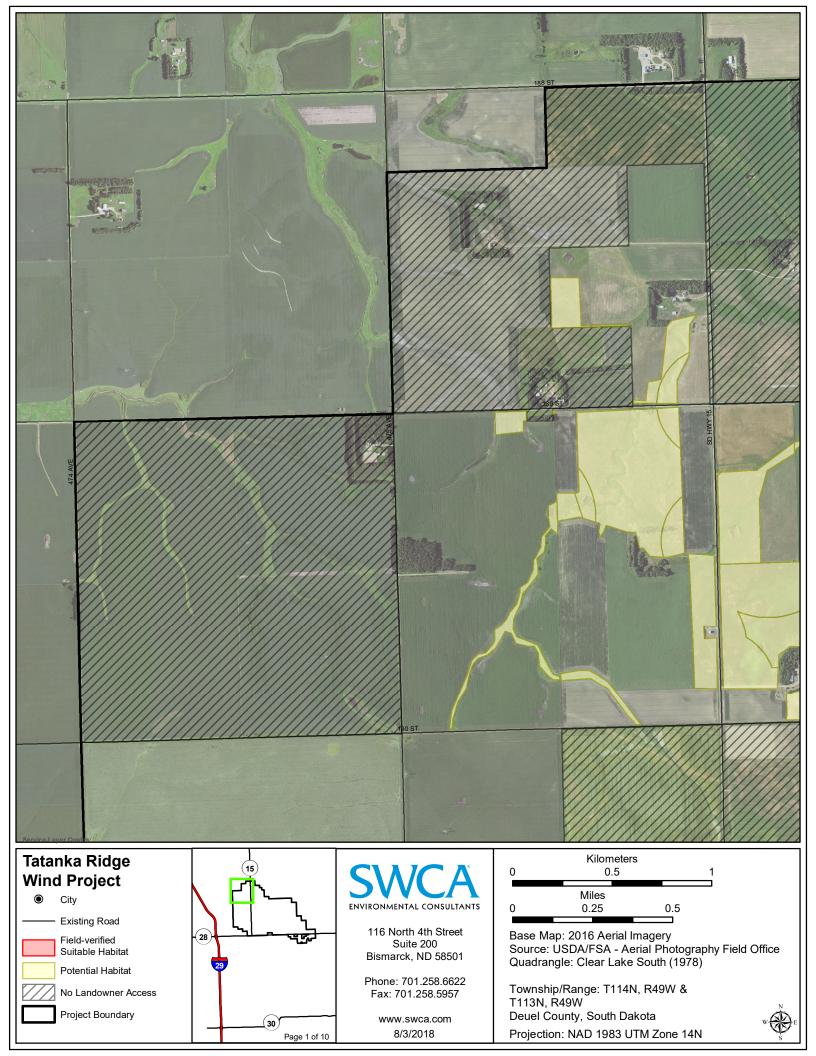
4 REFERENCES CITED

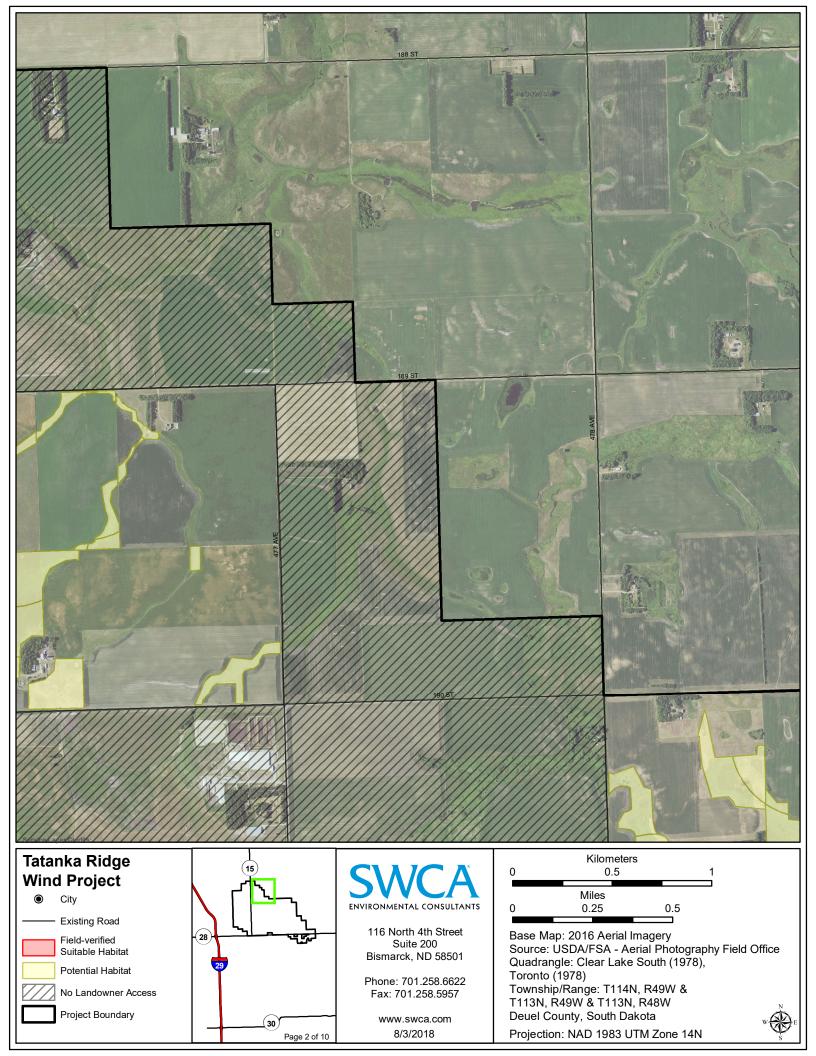
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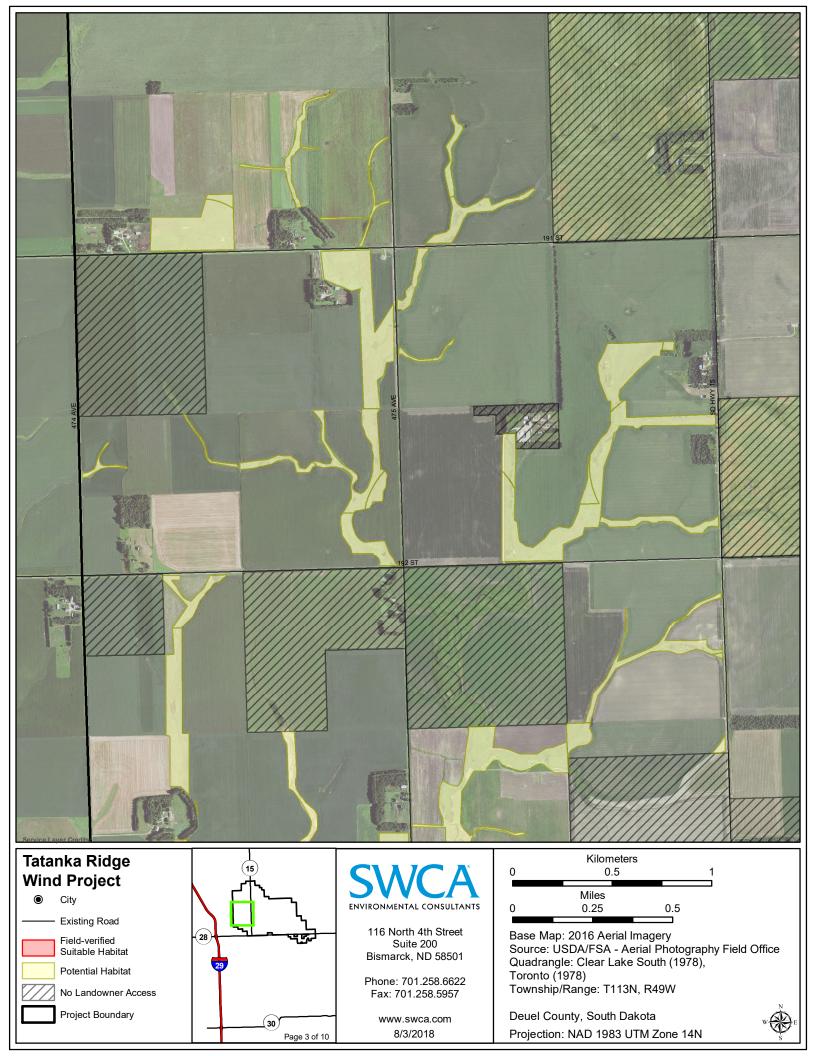
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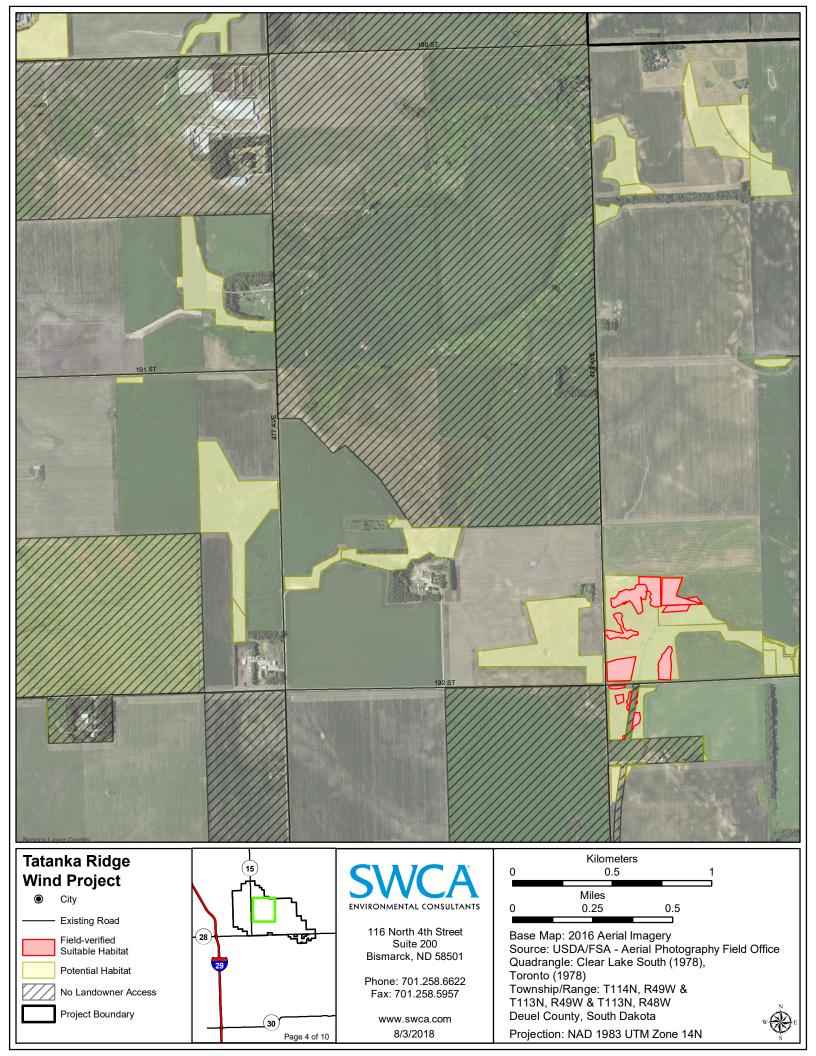
APPENDIX A

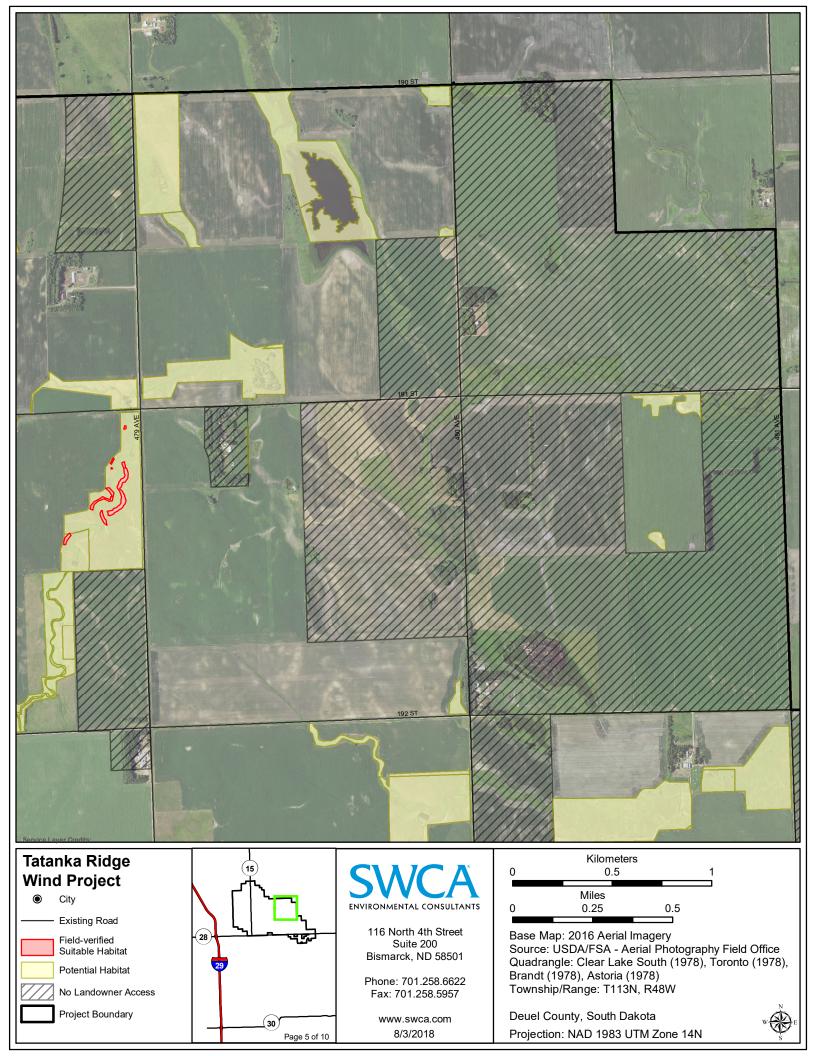
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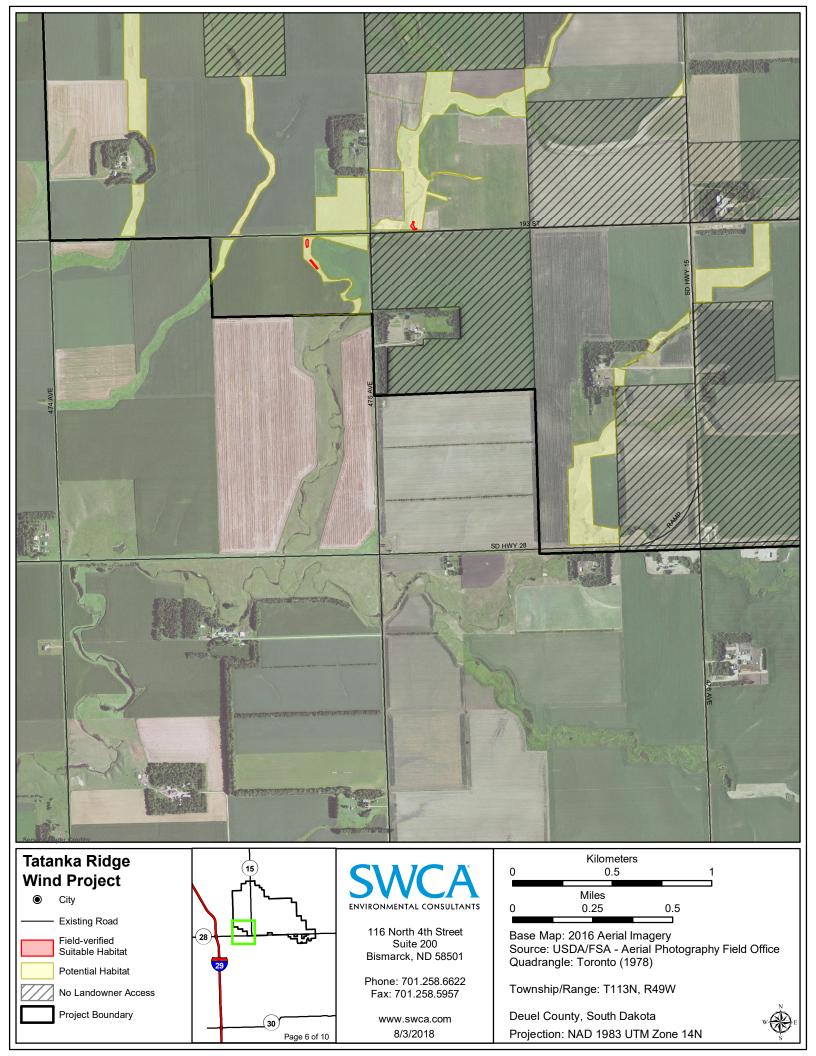


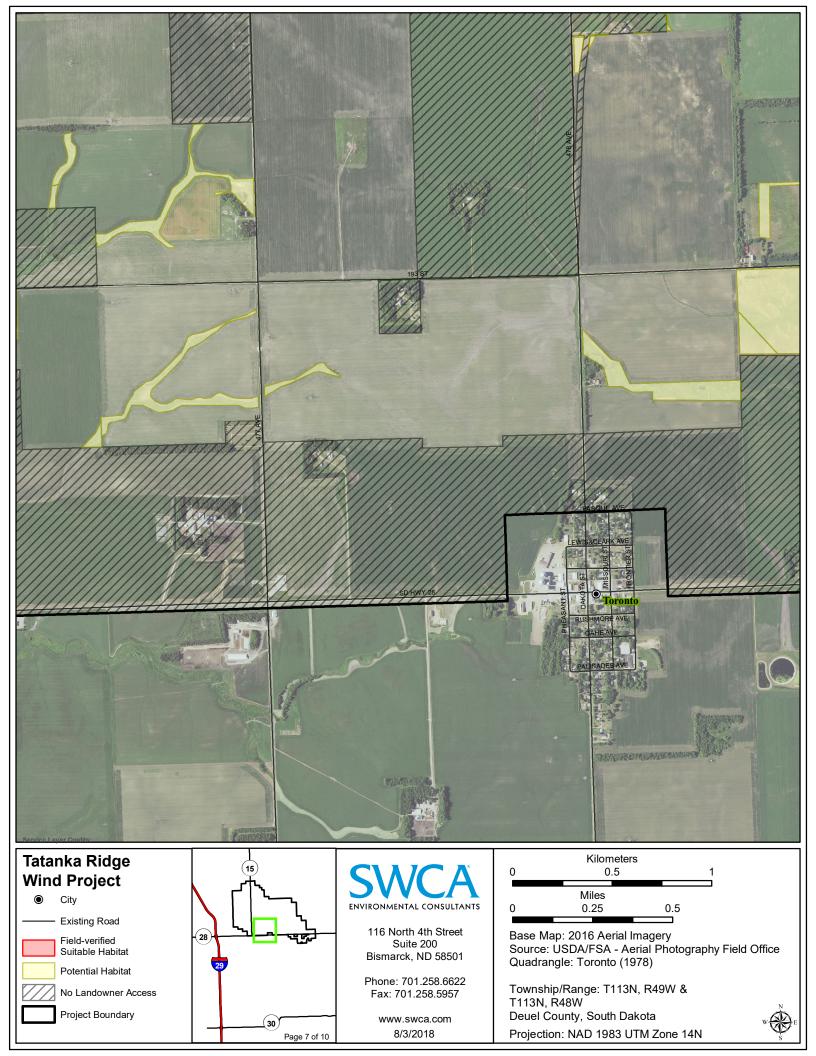


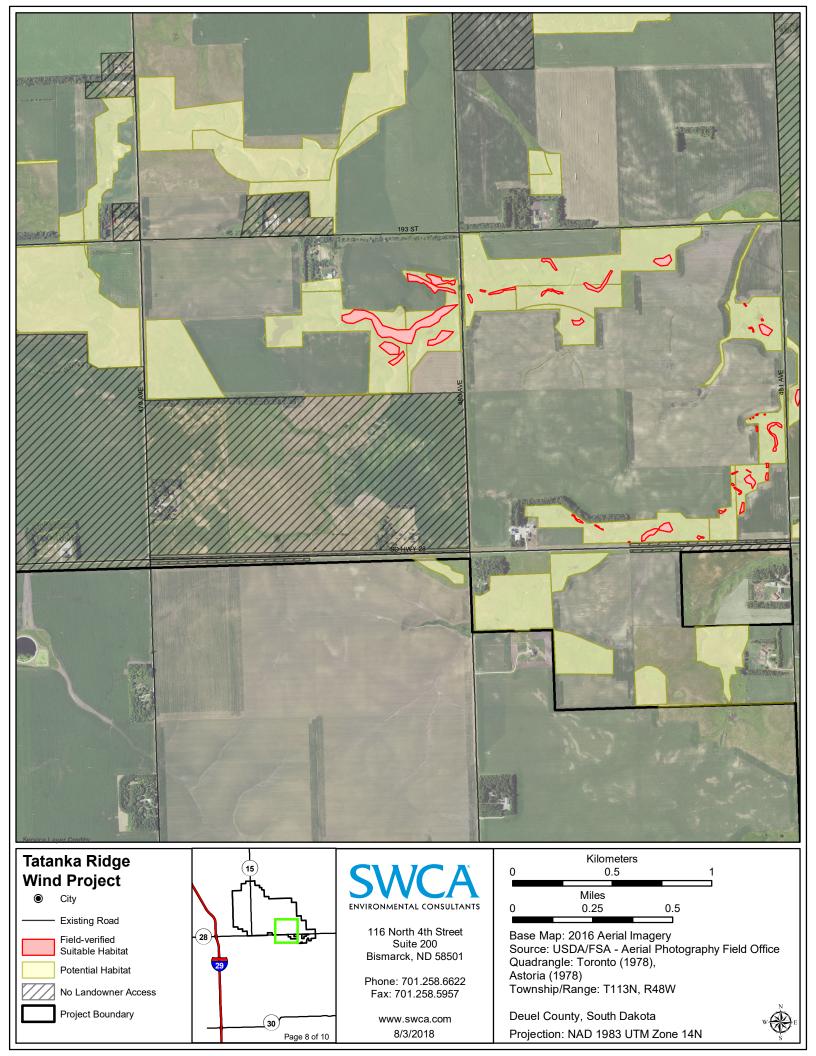


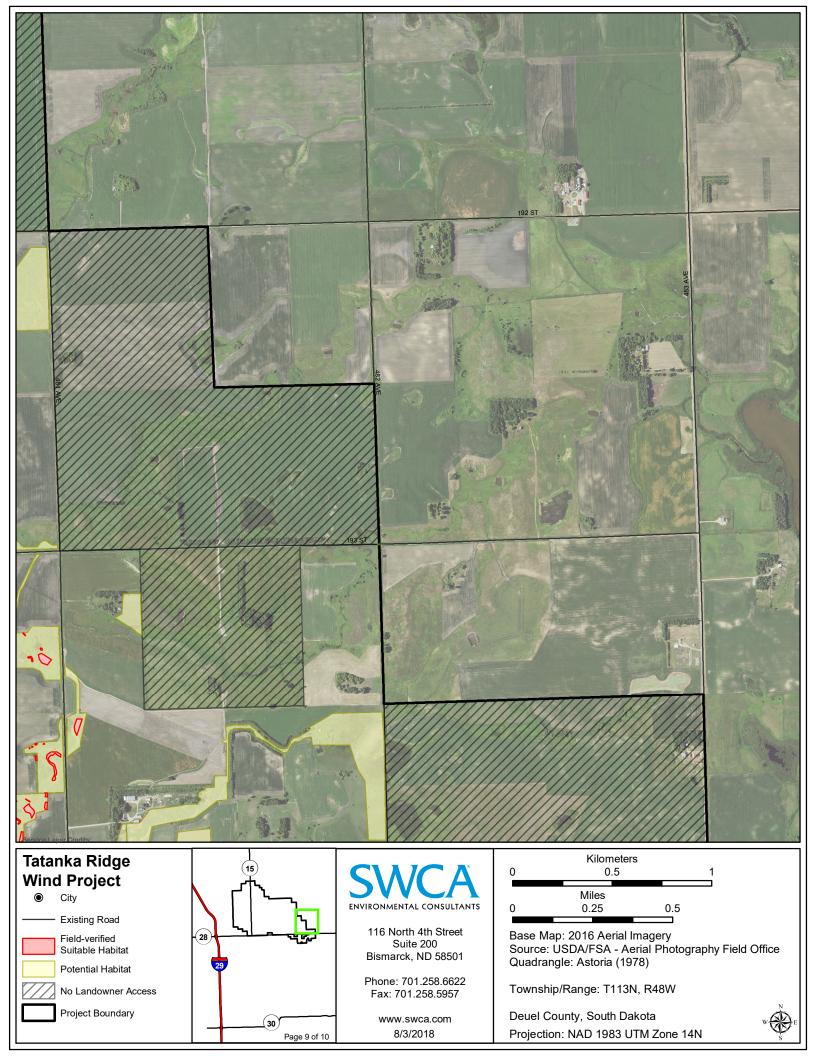


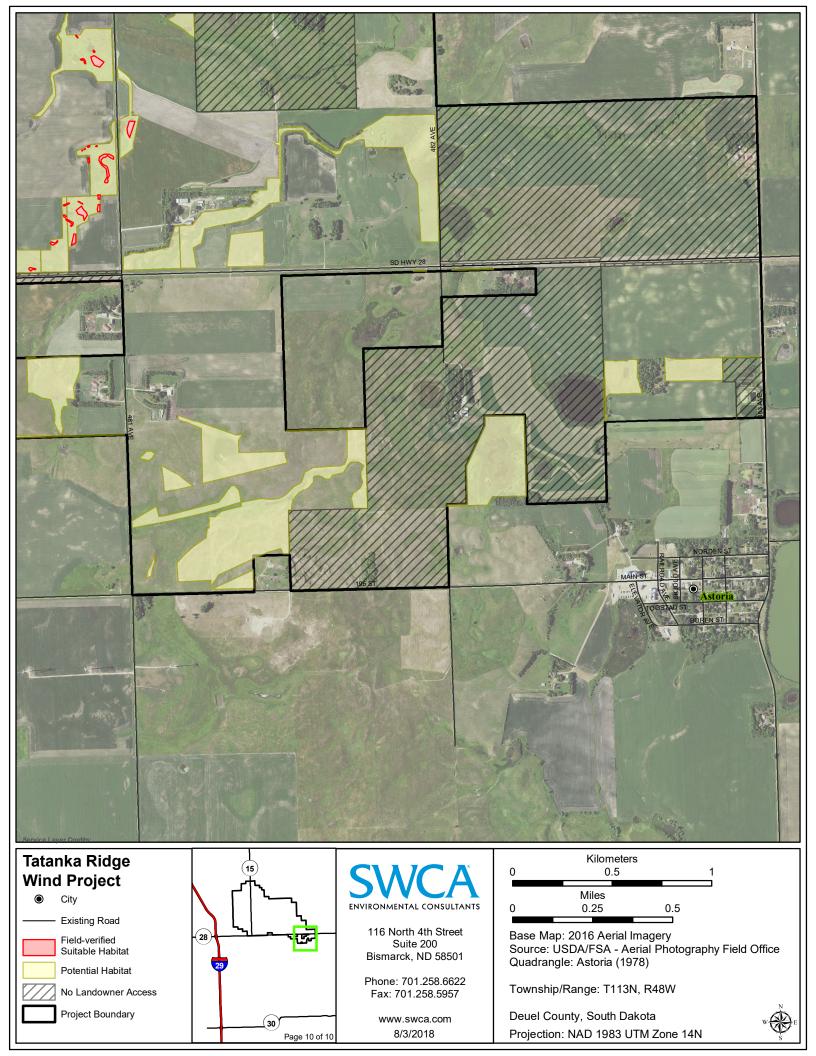












APPENDIX B

USFWS Survey Request



United States Department of the Interior



IN REPLY REFER TO: TE64070B-1 Skipper Permit FISH AND WILDLIFE SERVICE South Dakota Ecological Services

420 South Garfield Avenue, Suite 400 Pierre, South Dakota 57501-5408

June 13, 2018

Jake Powell, Senior Ecologist SWCA Environmental Consultants 1892 South Sheridan Avenue Sheridan, Wyoming 82801

Dear Mr. Powell:

This letter provides your site specific authorization per condition F.3 of Federal Endangered Species Permit No. TE64070B-1. Under this condition you are to notify the U.S. Fish and Wildlife Service (Service) Field Supervisor for the state in which activities are proposed to occur at least 30 days prior to conducting any activities.

The information required under condition F.3 was provided to the Service in a letter dated June 13, 2018. In summary, SWCA has a contract with Buffalo Ridge III, LLC to complete surveys for Dakota skipper and Poweshiek skipperling in Deuel County, South Dakota, during the 2018 adult flight period. Surveys will be conducted between approximately June 25 and July 15 by Mr. Jake Powell, Dr. Kenneth J. Kingsley, and Dr. David Lightfoot. The survey protocols will follow the 2018 Dakota skipper survey protocols

(<u>https://www.fws.gov/midwest/endangered/insects/dask/index.html</u>). The surveys will be conducted on field verified suitable habitat.

All survey activities should conform to the conditions of your Service permit TE64070B-1. Please report your data from this survey to the USFWS South Dakota Field Office .

As stated in your permit, your concurrence letter must be carried with this permit to authorize site-specific activities. If you have any questions, please feel free to call Charlene Bessken at 605-224-8693 x 231.

Sincerely,

Arothomon

Scott V. Larson Field Supervisor South Dakota Field Office

APPENDIX C

Butterfly County

Butterfly Count per Survey Day			June 30	July 5	July 7	July 8	July 10	July 11	July 12
Common Name	Scentific Name								
Monarch	Danaus plexippus	3	2	9	4	27	9	7	13
Regal Fritillary	Speyeria idalia	0	6	18	0	45	1	7	53
Common wood nymph	Cercyonis pegala nephele	4	1	12	2	16	5	0	13
Meadow fritillary	Boloria bellona	10	15	43	11	27	25	4	36
Painted lady	Vanessa cardui	0	0	1	0	0	0	0	0
Black swallowtail	Papilio polyxenes asterius	0	0	1	0	0	0	0	0
Pearl Crescent	Phyciodes tharos	0	0	4	0	0	3	1	1
Peck's skipper	Polites peckius	1	0	3	2	2	3	0	0
Long-dash skipper	Polites mystic dacotah	0	0	5	0	0	0	2	0
Tawny-edged skipper	polites themistocles	1	0	7	0	1	0	0	0
Clouded sulphur	Colias philodice	2	0	0	11	47	13	28	37
Varigated fritillary	Euptoieta claudia	0	0	0	0	2	2	4	8
Checkered white	Pontia protodice	0	0	0	0	1	1	0	0
Red Admiral	Vanessa atalanta rubria	1	0	0	0	3	1	2	0
Melissa blue	Lycaeides melissa	0	1	0	0	3	0	4	2
Orange sulphur	Coias eurytheme	0	0	0	0	0	0	5	0
Coral hairstreak	Satyrium titus	0	1	0	0	0	0	1	0

APPENDIX D

USFWS Flowering Plants Count

Plant Species	Average count					
Purple coneflower	1,000-5,000					
Milkweed	500-1,000					
Vetch	500-1,000					
Alfalfa	500-1,000					
Thistle	5,000-10,000					
Yellow coneflower	5,000-10,000					
Prairie violet	0					
Goldenrod	500-1,000					
Wild rose	100-500					
Curlycup gumweed	50-100					
Blazing star	1,000-5,000					
Penstemon	100-200					
Smooth fleabane	50-100					
Western wallflower	50-100					
Prairie lily	50-100					
Purple prairie clover	5,000-10,000					
Black-eyed Susan	500-1,000					
Scarlet globemallow	500-1,000					
Maximilian sunflower	0					
Spiderwort	0					
Harebell	50-100					
Silverleaf scurfpea	500-1,000					
Leadplant	1,000-2,000					
Wild bergamot	50-100					
Rocky Mountain beeplant	0					
Blanketflower	0					
Dandelion	5,000-10,000					



Page 1 of 9 NATIVE ENDANGERED SPECIES RECOVERY ENDANGERED WILDLIFE **Permit Number: TE64070B-1** Effective: 03/12/2018 Expires: 12/31/2023

Issuing Office:

Department of the Interior U.S. FISH & WILDLIFE SERVICE Endangered Species Permit Office 5600 American Boulevard, West, Suite 990 Bloomington, MN 55437-1458 permitsR3ES@fws.gov

Chief - Endangered Species

Permittee:

SWCA, INC dba SWCA ENVIRONMENTAL CONSULTANTS 116 NORTH 4TH STREET, SUITE 200 BISMARCK, ND 58501 U.S.A.

Name and Title of Principal Officer: SARAH BAER - DIRECTOR

Authority: Statutes and Regulations: 16 USC 1539(a); 50 CFR 17.22, 50 CFR 13.

Location where authorized activity may be conducted: Throughout the range of the species in the States of Iowa, Michigan, Minnesota, North Dakota, South Dakota and Wisconsin.

Reporting requirements: ANNUAL REPORT DUE: 01/31 See permit conditions for reporting requirements

Authorizations and Conditions:

Scientific Recovery Permit number TE64070B-1 replaces Sub-permit no. 17-20 issued on 06/29/2017. Sub-permit 17-20 is invalid as of 3/12/2018.

A. General Conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

B. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local, tribal, or other federal law. Necessary state and/or local permits where applicable, must also be acquired and observed; this permit is invalid without such permits.

C. Valid for use by Kenneth J. Kingsley, David Lightfoot, and Jake Powell. Field assistants not named on this



permit may conduct activities pursuant to this permit only under the direct supervision of a named permittee listed below. "On-sight" supervision is defined as having the authorized individual at a distance that would allow this individual to immediately assist a supervised individual, as needed, while they are conducting an authorized activity.

D. ACCEPTANCE OF THIS PERMIT SERVES AS EVIDENCE THAT THE PERMITTEE AND ITS AUTHORIZED AGENTS UNDERSTAND AND AGREE TO ABIDE BY THE TERMS OF THIS PERMIT AND ALL SECTIONS OF TITLE 50 CODE OF FEDERAL REGULATIONS, PARTS 13 AND 17, PERTINENT TO ISSUED PERMITS. SECTION 11 OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED, PROVIDES FOR CIVIL AND CRIMINAL PENALTIES FOR FAILURE TO COMPLY WITH PERMIT CONDITIONS.

E. Permittee is authorized to take (capture, handle, and release) the following species for scientific research (presence/absence surveys, studies to document habitat use, and population monitoring) aimed at recovery of the species:

Dakota skipper (*Hesperia dacotae*) Poweshiek skipperling (*Oarisma poweshiek*) Rusty patched bumble bee (*Bombus affinis*)

- F. Activities are authorized at the following locations:
 - F.1. Locations within Region 3 of the USFWS: Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin, upon receipt of written concurrence from the Field Supervisor, as outlined in Condition G.
 - F.2. Locations within Region 5 of the USFWS: Maine, Massachusetts, Virginia, and West Virginia, upon receipt of written concurrence from the Field Supervisor, as outlined in Condition G.
 - F.3. Locations within Region 6 of the USFWS: North Dakota and South Dakota upon receipt of written concurrence from the Field Supervisor, as outlined in Condition G.

G. Permittee shall notify and request approval from the USFWS Field Supervisor for the state in which activities are proposed to occur at least fifteen (15) days prior to conducting any activities. Contact information is available at: <u><https://www.fws.gov/midwest/endangered/permits/index.html></u> (located under 1. Recovery and Interstate Commerce Permits, For Fish and Wildlife Permit Holders). Your request for this site-specific approval must be in writing and must indicate:

G.1. Species for which proposed activities are being conducted.

- G.2. Location of proposed activities, including project site, county, and state.
- G.3. A full description of activities (i.e., proposed project, purpose and need, surveys, methods, etc.)



- G.4. Dates when the project is proposed to take place.
- G.5. Evidence that Permittee has received any required contracts to complete the activities.
- G.6. Whether all prior annual reporting requirements have been fulfilled.
- G.7. You may proceed with activities only upon receipt of written concurrence from the applicable USFWS Field Supervisor. *Your concurrence letter must be carried with this permit to authorize site-specific activities.*
- H. Permittees must adhere to the following conditions for all species:
 - H.1. Accidental mortality, may not exceed one (1) specimen per species. In the event that this number is met, all species activities for this permit must cease (e.g. One rusty patched bumble is accidentally killed, all activities associated with Rusty patched bumble bee must cease, but activities associated with Dakota skippers and Poweshiek skipperlings may continue.). You must contact the Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.) within two (2) business days and explain the incident and its circumstances. Your initial contact may be made by telephone; however, a written explanation must be provided within five (5) days of the incident to the following USFWS offices: Regional Recovery Permits Coordinator, Bloomington, Minnesota (Condition L.1.), the Minnesota/Wisconsin Ecological Services Field Office for the state in which the activity occurred (Condition M.). Following mortality or injury of a species you may not resume activities, for that species, authorized by this permit without written permission of the U.S. Fish and Wildlife Service, Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.).
 - H.2. Any individuals found dead or killed accidentally (during authorized activities) may be salvaged. Prior to collecting specimen(s), you must photograph to document the condition. For Dakota skipper and Poweshiek skipperling specimens, also see additional procedures in Condition I.10. You must preserve the specimen(s) using standard museum practices including proper identification and indices [include date, complete scientific and common names, and geographic location (township, range, section, and UTM) where salvaged]. All specimens obtained under this permit remain the property of the United States Government and must clearly be identified as such. All specimens shall be sent to a public scientific or educational facility or museum in the state where the individuals were collected along with a copy of the permit(s) under which they were collected. When agreed upon in writing by the Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.), specimens may be sent out of state to an alternate specialized educational facility or museum within the United States. A list of specimens collected (if any), pertinent location data, and the facility where specimen is curated shall be provided in your annual and final reports (Conditions K.1.e and K.2.g.)
 - H.3. Upon any new discovery location, permittee shall notify the U.S. Fish and Wildlife Service Field Supervisors (Condition M.) and the Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.) in writing of where the new discovery location occurred (previously undocumented sites only) within



fourteen (14) days of discovery unless otherwise specified by the Field Supervisor(s).

- I. In addition to Condition H. permittees must adhere to the following conditions for <u>Dakota skipper and Poweshiek</u> <u>skipperling</u>:
 - I.1. To the extent practicable, identification of Dakota skippers and Poweshiek skipperlings shall be done in a manner that avoids capture.
 - I.2. Any specimens that must be captured for identification shall be handled in a manner that minimizes the likelihood of injury.
 - I.3. If it is necessary to capture specimens to facilitate identification, you may capture them in a soft butterfly net. All reasonable efforts must be made to allow the butterfly to walk freely inside the net and to avoid direct contact with the butterfly. This may be done, for example, by holding the net upside down and holding the bottom of the net upwards to allow the butterfly to walk up into the net - a pouch may be created in the upside-down net to facilitate close inspection by pinching the net below the butterfly while ensuring its free movement inside the net.
 - I.4. Captured butterflies may also be placed inside plastic jars by carefully coaxing them from the net into the jar. The jar must contain some type of tissue (preferred), paper towel, or soft cloth that the butterfly may stand or walk on while in the jar to facilitate visual inspection.
 - I.5. Any captured Dakota skippers or Poweshiek skipperlings shall be released as near to the capture site as possible and as soon as is practicable. Temporary holding of specimens for the purpose of species identification shall not exceed 5 minutes.
 - I.6. No mutilation (e.g., leg removal) or marking schemes are authorized.
 - I.7. Handling affects the behavior of some butterflies after their release. Permittee shall observe post-release behavior of any Dakota skippers or Poweshiek skipperlings that are captured and released. The behavior of each captured and released butterfly will be noted and reported annually as described in Condition K.1.c.
 - I.8. Collection of voucher specimens of Dakota skipper: This may occur only when the species is encountered in a county where it has not been previously recorded. A list of counties where the Dakota skipper has been documented can be found online at https://www.fws.gov/midwest/endangered/insects/dask/pdf/CntyOccurrencesDASKNov2017.pdf . In new counties, only one voucher specimen is permitted and collection of a female is discouraged if a male could be vouchered instead. In addition, dead or dying specimens (from natural causes) may be collected for voucher specimens regardless of geographic area, adhering to Conditon H.2. Upon approval and review by the Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.), any individuals accidentally killed or lethally injured may also be collected as voucher specimens. The number, location, cause of death (if known), sex, and any other information relevant to voucher specimen must be reported in the annual report as described in Condition K.1.d.
 - I.9. The collection of voucher specimens of Powesheik skipperlings is strictly prohibited except for circumstances identified in Condition H.2.



I.10. If collection of a voucher specimen of Dakota skipper (Conditions H.2. and I.9.) and/or Powesheik skipperling (Condition H.2.) occurs, please adhere to the following protocol: For each vouchered specimen, clip two legs and place in a 30mL or smaller vial filled with 95-100% ethanol (EtOH; <u>not</u> isopropyl alcohol). The remainder of the specimen shall be preserved according to the conditions noted in H.2., making note on the identification tag that two legs were removed and sent to the Minnesota/Wisconsin Field Office. The vial with legs should also have all proper identification and indices [include date collected, complete scientific and common names, and geographic location (township, range, section, and UTM) where salvaged, and a note identifying the specimen as property of the United States Government]. Double bag the vial and ship in a strong outer container with enough absorbent material to soak up any ethanol that might accidentally leak. Include a copy of permit(s) under which the sample(s) was collected when shipping vials. Label the outer shipping box "Samples. This package conforms to 49 CFR 173.4" Ship this package to the Minnesota/Wisconsin Field Office as soon as possible.

J. In addition to Condition H. permittees must adhere to the following conditions for rusty patched bumble bee:

- J.1. Rusty patched bumble bees may be captured with aerial hand nets following the methodology, guidelines, and best practices included in the "Survey Protocols for the Rusty Patched Bumble Bee (*Bombus affinis*)" (Survey Protocols). Survey Protocols are available online at:
 ">https://www.fws.gov/midwest/endangered/insects/rpbb/guidance/>. Note that you must use the most upto-date version of the Survey Protocol, available on the USFWS website page on February 28th of each year.
- J.2. For areas believed to be unoccupied by rusty patched bumble bee (See map online at: ">https://www.fws.gov/midwest/endangered/insects/rpbb/guidance/>), you are authorized to take (capture, release, and accidental mortality) only in the event that the species is captured accidental to lawful survey activities directed at other species (if using lethal survey methods such as bee bowl, pan, or cup traps, malaise traps, or blue vane traps). This permit does not authorize any activities for the specific purpose of lethal capture of rusty patched bumble bee. If rusty patched bumble bees are identified at a survey site, all lethal survey methods shall cease within a two (2) mile area and permittee shall contact the U.S. Fish and Wildlife Service in accordance with Condition H.1. Should accidental mortality occur you must document the capture and collect information outlined in Condition K.2.f. on the captured individual.
- J.3. For a permittee using approved, lethal protocols in areas where the lethal protocols are allowed (Condition J.2.), all rusty patched bumble bees need to be identified from samples annually, in time to be included in the annual report due January 31. In some cases, accidental mortality may not be discovered until specimens are identified by a bee taxonomist. In these cases the permit holder and/or taxonomists must take an initial look through samples to identify rusty patched bumble bees in order to include this information in the annual report. In the event that one or more rusty patched bumblebees are identified in a sample, all lethal survey activities must cease within two (2) miles of the capture location. The Minnesota/Wisconsin Ecological Services Field Office (Condition L.2.) must be contacted within two (2) business days of discovery of the specimen and the circumstances of collection. Initial contact may be made by telephone, however, a written explanation must be provided within five (5) days of the identification to the following USFWS offices: Regional Recovery Permits Coordinator, Bloomington, Minnesota (Condition L.1.), the Minnesota/Wisconsin Ecological Services Field Office (Condition M.).



J.4. The collection of a voucher specimen of Rusty patched bumble bee is strictly prohibited except for circumstances identified in Condition H.2.

K. An annual report of all activities conducted under the authority of this permit is due by January 31 following each year this permit is in effect. In addition, copies of all publications and reports resulting from work conducted under this permit must be submitted as they become available. Failure to furnish any reports required by this permit is cause for permit revocation and/or denial of future permit applications.

K.1. Reporting requirements for Dakota Skipper and Poweshiek skipperling:

- K.1.a A complete discussion of field procedures, data collection methods, results, and conclusions.
- K.1.b. The date and location (state, county, locality, geographic coordinates, site characteristics) where each species was encountered.
- K.1.c. A complete discussion of post-capture behavior, including, at a minimum, whether the specimen:

K.1.c.1. Flew to and perched on herbaceous vegetation, low shrubs, or to out-of-sight location in herbaceous vegetation (e.g., into plant litter or duff layer or into bases of grasses).

- K.1.c.2. Flew into tall shrubs or trees and out-of-sight.
- K.1.c.3. Flew away did not see butterfly perch or fly into vegetation; or,
- K.1.c.4. Post-release behavior unknown.
- K.1.d. A complete description of injuries and/or mortalities to listed species while in your possession, the dates of occurrence, location, cause of death (if known), any circumstances surrounding the incidents, sex, numeric estimates of the mortalities broken down by lifestage (e.g., eggs, larvae, pupae, adults), and a description of any steps taken to reduce the likelihood that such injuries and/or mortalities will occur in the future.
- K.1.e. Any other data you may have collected for individual butterflies, such as evidence of damage or injury, mortalities, locations where salvaged specimens are being kept.
- K.1.f. Copies of any separate reports and/or publications resulting from work conducted under the authority of this permit.
- K.1.g. Copies of all site specific authorization letters required under Condition G.
- K.2. Reporting requirements for rusty patched bumble bee:

K.2.a. A description of locations (date, time, geographic locations (state, county, and geographic



coordinates using latitude and longitude in decimal degrees)) of areas surveyed, even if no rusty patched bumble bees were encountered.

- K.2.b. The date, time, geographic locations (state, county, and geographic coordinates using latitude and longitude in decimal degrees) of any rusty patched bumble bees encountered. While not required, we appreciate receiving information for other *Bombus* species captured, as this information could help indicate suitable habitat for rusty patched bumble bee.
- K.2.c. A description of the habitat conditions where the surveys took place (e.g., floral diversity and abundance, management practices and potential stressors).
- K.2.d. A description of field procedures, data collection methods, and survey effort.
- K.2.e. Photographs of the identifying characteristics for each individual federally-listed species. Photographs of other *Bombus* species observed are encouraged.
- K.2.f. A complete description of injuries or mortalities to listed species while in your possession, the dates of occurrence, location of occurrence, any circumstances surrounding the incidents, and a description of any steps taken to reduce the likelihood that such injuries and/or mortalities will occur in the future.
- K.2.g. Any other data you may have collected for individual rusty patched bumble bees, such as evidence of damage or injury, mortalities, locations where salvaged specimens are being kept.
- K.2.h. Copies of any separate reports and/or publications resulting from work conducted under the authority of this permit.
- K.2.i. Copies of all site specific authorization letters required under Condition G.

If no activities occurred over the course of the year, indication of such shall be submitted as an annual report.

L. Copies of your reports shall be sent to the offices listed below. When possible, electronic copies shall be submitted in lieu of hard copies in MS Word, Portable Document Format, Rich Text Format, or other file format that is compatible with the receiving office.

- L.1. Regional Recovery Permits Coordinator
 - U.S. Fish and Wildlife Service Midwest Region (Region 3)



Ecological Services - Endangered Species 5600 American Blvd. W., Suite 990 Bloomington, Minnesota 55437-1458 (612/713-5343; fax 612/713-5292) permitsR3ES@fws.gov

L.2. Minnesota/Wisconsin Ecological Services Field Office

U.S. Fish and Wildlife Service - Midwest Region (Region 3)

Ecological Services - Endangered Species

4101 American Blvd. E.

Bloomington, MN 55425

(952/252-0052; fax 952/646-2873)

L.3. Regional Recovery Permits Coordinator

U.S. Fish and Wildlife Service - Northeast Region (Region 5)

Ecological Services - Endangered Species

300 Westgate Center Drive

Hadley, Massachusetts 01035-9589

(703/358-2402; fax 413/253-8482)

permitsR5ES@fws.gov

L.4. Regional Recovery Permits Coordinator

U.S. Fish and Wildlife Service - Mountain Prairie Region (Region 6)

Ecological Services - Endangered Species

P.O. Box 25486, DFC, MS 60120

Denver, Colorado 80225

(719/628-2670)



permitsR6ES@fws.gov

M. Additionally, based on geographic area where surveys were conducted, reports and publications shall be submitted to the offices listed under Field Office Contact Information at: https://www.fws.gov/midwest/endangered/permits/index.html>.

All correspondence related to this permit should reference the permit number shown above. Any questions you may have regarding this permit should be directed to Carlita Payne, the Region 3 Endangered Species Permits Coordinator at (612) 713-5339.

cc: FWS/Region 5 and 6 (Attn: Regional Recovery Permits Coordinator) FWS/ES/ Endangered Species Coordinators IA-IL, IN, MI, MN-WI, OH DNR, Endangered Species Coordinators IA, IL, MI, MN, OH, IN, WI