

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. HP22-001

**IN THE MATTER OF THE APPLICATION BY SCS CARBON TRANSPORT
LLC FOR A PERMIT TO CONSTRUCT A CARBON DIOXIDE TRANSMISSION
PIPELINE IN SOUTH DAKOTA**

Direct Testimony of Hilary Morey
On Behalf of the Staff of the South Dakota Public Utilities Commission
June 23, 2023



1 **Q: State your name.**

2 A: Hilary Morey

3

4 **Q: State your employer.**

5 A: State of South Dakota, Department of Game, Fish, and Parks

6

7 **Q: State the program for which you work.**

8 A: Division of Wildlife, Terrestrial Resource Section

9

10 **Q: State the program roles and your specific job with the department.**

11 A: The role of the Terrestrial Resources section is to study, evaluate, and
12 assist in the management of all wildlife and associated habitats in South
13 Dakota. Management includes game and non-game wildlife populations,
14 habitat management on public lands and technical assistance and habitat
15 development on private lands, population and habitat inventory, and
16 environmental review of local and landscape projects. As the
17 environmental review senior biologist, I coordinate reviews of various
18 development projects within the state of South Dakota to assist
19 developers with compliance with state wildlife laws and to serve as
20 stewards of our state's outdoor resources.

21

1 **Q: Explain the range of duties you perform.**

2 A: Duties include coordinating environmental review evaluations related to
3 terrestrial and aquatic wildlife and associated habitats and drafting
4 responses with department staff for projects. I also represent the
5 Department on state and national committees. I am a co-principal
6 investigator on two State Wildlife Grants that are researching the effects of
7 wind energy development on species of greatest conservation need. I also
8 assist in field work and wildlife surveys where needed. My resume is
9 attached as Exhibit_HM-1.

10

11 **Q: On whose behalf was this testimony prepared?**

12 A: This testimony was prepared at the request of staff at the South Dakota
13 Public Utilities Commission.

14

15 **Q: What role does the Department of Game, Fish and Parks have in the**
16 **permitting process of a pipeline project?**

17 A: Game, Fish and Parks has no regulatory authority when it comes to
18 permitting of pipeline projects. The agency's role is to consult with
19 developers and provide wildlife survey data, spatial data, peer reviewed
20 literature, and recommendations on how to minimize or avoid potential
21 impacts to wildlife and associated habitats to enable developers to make
22 informed decisions related to natural resources.

23

1 **Q: Have you reviewed the Application and attachments? How else did**
2 **you learn details around the proposed project?**

3 A: Yes, I have reviewed relevant sections of the application and attachments.
4 GFP was first contacted by Summit Carbon Solutions (SCS) in October
5 2021 regarding the Midwest Carbon Express (MCE) pipeline in South
6 Dakota.

7
8 **Q: Did GF&P provide comments and recommendations to Summit**
9 **Carbon Solutions about the project area? Please identify who**
10 **provided those comments and provide a brief summary of them.**

11 A: GFP was initially contacted about the MCE in Fall of 2021 via a web form
12 submission for a search of the South Dakota Natural Heritage Database
13 for threatened, endangered or sensitive species records in the project
14 area. GFP responded to the request by providing species records within
15 the project area.

16 In January 2022, GFP met with wildlife consultants for SCS and discussed
17 potential wildlife species and habitat that may be present within the project
18 area. Shortly after the meeting, SCS submitted a project footprint for the
19 MCE to our online environmental review tool, which provides information
20 related to wildlife and wildlife resources that may be present within a
21 project area.. I have also discussed project details with other GFP
22 biologists who have specialized expertise related to wildlife species of
23 concern or the project location. GFP and SCS discussed federal and

1 state listed species, potential survey methodology, proposed surveys and
2 timelines. After the meeting with wildlife consultants, GFP provided a siting
3 letter to SCS via their wildlife consultant (Exhibit_HM-2). The siting letter
4 described important wildlife habitats (grasslands, wetlands, etc.),
5 information about sensitive, rare, endangered or threatened species that
6 could occur in the project area, and recommendations to avoid and
7 minimize impacts to wildlife.

8

9 **Q: Are there any sensitive wildlife areas crossed by the project?**

10 A: Yes. The SCS pipeline project crosses several waterbodies (streams,
11 rivers and wetlands), some of which are known to be occupied by the
12 federally endangered Topeka Shiner, and the state endangered Northern
13 Redbelly Dace, and areas of native prairie. The proposed pipeline route
14 also crosses many US Fish and Wildlife Service (USFWS) easements.

15

16 Grasslands (particularly untilled native prairie) are of high
17 conservation value in South Dakota. Approximately 70% of the native
18 mixed-grass prairie has been lost in eastern South Dakota, and
19 approximately 32% has been lost in western South Dakota (Wright and
20 Wimberly 2013, Bauman et al. 2016). Across the Great Plains Region, it's
21 estimated that less than 5% of original tallgrass prairie remains intact
22 (Samson et al. 2004). A majority of the potentially undisturbed grasslands
23 in the project boundary occur in McPherson, Edmunds, Hyde and Hand

1 Counties, as well as a lesser extent in Brown, Spink and Sully Counties. In
2 the remainder of the project area (southeast South Dakota) potentially
3 undisturbed lands primarily occur near water bodies, particularly in and
4 around riparian areas.

5
6 A number of small streams and rivers are proposed to be crossed by the
7 MCE pipeline project. Installation of the MCE pipeline could temporarily
8 impact streams and wetlands where open trench installation will be used.
9 SCS proposes to restore any impacts to waterbodies where open trench
10 installation will be used.

11

12 **Q: Did GFP provide any recommendations to SCS on ways to avoid or**
13 **minimize impacts to wildlife and habitat impacts from construction of**
14 **the project? If yes, what were those recommendations?**

15

16 Yes, GFP provided recommendations in letters addressed to the applicant
17 (exhibit_HM-2), as well as via email correspondence. The primary
18 recommendations were to route the pipeline and associated infrastructure
19 in previously disturbed areas (e.g. existing ROW), minimize fragmentation,
20 and utilize existing infrastructure. GFP provided recommendations related
21 to seasonal construction timing restrictions for prairie grouse leks, as this
22 project is located in priority habitat. GFP further provided
23 recommendations to horizontally directional drill under streams that may

1 be occupied by the federally endangered Topeka Shiner or the state
2 threatened Northern Redbelly Dace, and recommendations to minimize
3 impacts to state endangered Lined Snakes.

4

5 **Q: Based on the information provided in the Application, in your opinion**
6 **does the environmental survey work completed or in process of**
7 **being completed by SCS properly identify potential impacts to the**
8 **terrestrial and aquatic environment?**

9 A: Proper wildlife surveys are important for determining if sensitive wildlife
10 habitats and/or protected species may be present within a project area,
11 and what potential avoidance, minimization or mitigation measures may
12 be needed to avoid impacts to those species (e.g. seasonal timing
13 restrictions for construction near eagle nests, tree removal outside of the
14 bat active season). To date, SCS has completed Lined Snake surveys,
15 Dakota Skipper Surveys, aerial raptor nest surveys, prairie grouse lek
16 surveys, Topeka Shiner habitat assessments, Northern Redbelly Dace
17 habitat assessments, Northern Long-eared bat suitable habitat
18 assessments, and Western Prairie Fringed Orchid surveys. SCS
19 consulted with the USFWS on most surveys regarding proper
20 methodology. SCS consulted with GFP on Prairie Grouse Lek Surveys,
21 Lined Snake Surveys, Western Prairie Fringed Orchid Surveys and
22 Dakota Skipper Surveys. SCS completed the proper desktop analysis to
23 identify potential sensitive and protected species present in the project

1 area, as well as identification of potential waterbodies and important
2 wildlife habitats within the project area. SCS field surveys were
3 appropriate to document potential sensitive species present within the
4 project area.

5

6

7

8 At the time of filing of this testimony, one round of Lined Snake
9 presence/absence surveys has been completed (Summer 2022) with no
10 proposed surveys in 2023. GFP had the opportunity to review and concur
11 with the proposed survey methods for lined snakes in 2022. The
12 methodology that was proposed by SCS was appropriate. Survey effort in
13 2022 for Lined Snake was very limited as SCS did not have permission to
14 survey for Lined Snakes on 2 of 3 sites identified to contain potentially
15 suitable habitat. In the absence of access to private properties for lined
16 snake surveys, GFP is presuming the presence of lined snakes at the 2
17 un-surveyed sites identified in the 2022 SCS Lined Snake Survey Report
18 for the purpose of adopting avoidance and minimization measures related
19 to lined snakes.

20

21 **Q: What are the potential impacts to terrestrial wildlife and terrestrial**
22 **wildlife habitat as a result of the construction of a pipeline project?**

1 A: Potential impacts to wildlife associated with construction of the proposed
2 project could include habitat loss (temporary and permanent), alteration
3 and fragmentation of habitat. Some species of wildlife (e.g. fossorial or
4 ground dwelling, ground nesting) could potentially be crushed during
5 ground disturbing activities. Some bird species (e.g. raptors, eagles,
6 waterfowl etc.) could be disturbed by construction activity during sensitive
7 life stages such as the nesting and fledging periods.

8
9 Permanent habitat loss can occur from construction of access roads,
10 buildings, launcher/receiver sites and mainline valves. This is often a small
11 percent of the total project acreage. Temporary habitat loss occurs when
12 habitat is disturbed for a time during construction of the pipeline but is
13 restored after construction. Habitat fragmentation is the division of a block
14 of habitat into smaller, and at times into isolated patches. Habitat
15 fragmentation can decrease the overall value of the remaining habitat.
16 Identification and avoidance of contiguous blocks of habitat, especially in
17 altered landscapes, is an important component of grassland and wetland
18 bird conservation (Bakker 2020).

19

20 **Q: Can you suggest methods to address temporary and permanent**
21 **changes to terrestrial habitat?**

22 A: Temporary impacts to terrestrial habitat resulting from construction
23 activities likely can be reclaimed by restoring impacted areas by grading

1 and reseeding. We had previously provided the applicant's wildlife
2 consultant with a publication titled "Best Management Practices Guide for
3 Restoration of Native Grasslands and Sensitive Sites Resulting from
4 Energy or Industrial Development" (Bauman 2020) for their consideration
5 in project planning. In general, disturbed areas should be restored using
6 native seed sources to reduce the introduction of new or discourage
7 encroachment of already present exotic and/or invasive species. Above
8 ground, permanent facilities should be sited in areas that have been
9 previously disturbed.

10

11 **Q: Are there different types of grasslands?**

12 A: Yes.

13

14 **Q: Please describe the following: native prairie, hayland, pasture, CRP,
15 and cropland.**

16 A: Grasslands are areas that contain plant species such as graminoids and
17 are commonly used for grazing or set aside for conservation purposes.
18 They can also be areas which are planted to a mixture of grasses and
19 legumes for livestock grazing or feed. Native prairie is grassland upon
20 which the soil has not undergone a mechanical disturbance associated
21 with agriculture or any other type of development. Hayland is grassland
22 that is managed by frequent mowing and often contains non-native plant
23 species either intentionally or by encroachment. Pasture is grassland that

1 may contain non-native plant species either intentionally or by
2 encroachment and is managed through grazing. In some instances,
3 hayland and pasture could be native prairie; in other situations, hayland
4 and pasture could be land once cultivated and restored to grassland
5 habitat. Conservation Reserve Program acres (CRP) can be protection of
6 existing grassland or grassland that occurs on land that was once tilled
7 and used for crop production and has now been seeded to herbaceous
8 cover. The CRP program is intended to address soil loss, water quality,
9 and provide wildlife habitat. Cropland could be described as agricultural
10 lands cultivated and used to grow crops such as corn, soybeans, small
11 grains, and others.

12

13 **Q: Are there any areas of native prairie in the proposed project?**

14 A: Yes. Spatial analysis conducted by Bauman et al. (2016) has identified
15 potentially undisturbed lands within the proposed project, particularly in
16 McPherson, Edmunds, Hyde and Hand counties, as well as riparian areas
17 across the project. Bauman et al. (2016) is one of the best available
18 spatial data sets representing the location of untilled native grasslands.

19

20 **Q: Do grasslands other than native prairie have conservation value?**

21 A: Yes. Working grasslands like pasture, hayland, and conservation
22 grassland plantings (e.g. CRP plantings) serve as surrogates for native
23 grasslands. Some grassland dependent species (prairie grouse, Baird's

1 sparrow, Northern Harriers) require grassland patches with relatively tall
2 (12 inches or more) vegetation and accumulation of residual litter
3 characterized by light grazing pressure. Other species (Ferruginous
4 Hawks, Burrowing Owl, Chestnut-collared Longspur) require open
5 expanses of grasslands characterized by short vegetation that is typical of
6 moderate to heavy grazing pressure. Sprague's Pipit, Long-billed Curlew,
7 Bobolink and Dickcissel require grasslands with moderate grass heights
8 and periodic disturbance from grazing, mowing or prescribed fire (Johnson
9 et al. 2010, Bakker 2005, Shaffer and DeLong 2019). Although various
10 patches of grassland habitat can appear in "better" or "worse" condition
11 based on vegetation height and plant species composition, GFP considers
12 all grassland habitat as important for wildlife based on the information
13 presented above. Grassland birds have evolved with a gradation of
14 grazing intensities. Grassland wildlife diversity can be maximized by
15 creating a heterogeneous landscape comprised of short, medium and tall
16 vegetation structures. Grazing (haying and burning) management can
17 provide this variation in vegetative structure.

18

19 **Q: One of the GF&P's recommendations was that efforts should be**
20 **made to avoid siting the project in grasslands, especially untilled**
21 **native prairie. Based on the information in the Application and the**
22 **proposed project route, did SCS demonstrate efforts to address this**
23 **recommendation? Please explain.**

1 A: It appears that the majority of the proposed project (73%) will be sited in
2 previously disturbed areas (e.g. cropland), 12% of the project will be sited
3 in pasture land/hay land and 8.8% in grassland/herbaceous cover (Table
4 17 of the application). However, at the time of filing of this testimony, the
5 exact location of access roads and mainline valves is not available for
6 review.

7
8 **Q: Are there any areas of large (> 160 acre) contiguous grassland**
9 **habitat in the proposed project?**

10 A: No.

11

12 **Q: If the final project route changed from that provided in the**
13 **application, could the potential terrestrial environment impacts**
14 **change?**

15 A: Yes.

16

17 **Q: What are the potential impacts to aquatic wildlife and aquatic wildlife**
18 **habitat as a result of the construction of a pipeline project?**

19

20 A: Impacts to aquatic habitats (streams, lakes, rivers and wetlands) can be
21 temporary or permanent. Temporary impacts from construction of the
22 MCE pipeline project related to open trench installation across a
23 waterbody include: increase in sedimentation, changes in stream bottom

1 elevations, or disturbance to riparian habitats. Temporary impacts from
2 construction of the MCE pipeline project related to horizontal directional
3 drilling across a waterbody could include an unintentional release of
4 drilling fluid into a stream during horizontal drilling. Permanent impacts to
5 aquatic habitats from construction of the MCE pipeline project could
6 include conversion of palustrine forested wetlands and palustrine scrub-
7 shrub wetlands to palustrine emergent wetlands (e.g. permanent change
8 in vegetative community and resulting ecological function of a wetland).

9

10 Aquatic species could be directly impacted by entrainment or impingement
11 during water pumping operations during construction of the MCE pipeline.

12 Aquatic invasive species (in particular zebra mussels) could inadvertently
13 be introduced to a new waterbody in the state by improperly
14 decontaminated construction equipment or improper discharge of water
15 for construction or hydrostatic testing (e.g. run off into a waterbody).

16

17 **Q: Can you suggest methods to address temporary and permanent**
18 **impacts to aquatic habitat?**

19 **A:** Open trench waterbody crossings should be conducted during periods of
20 low or no flow as much as is practicable and stream bottoms should be
21 returned to pre-construction elevations. GFP also recommends
22 maintaining seasonally appropriate flows as much as is practicable during
23 in-stream construction. To prevent the spread of aquatic invasive species,

1 GFP recommends using the U.S. Bureau of Reclamation Equipment
2 Inspection and Cleaning Manual (located at:
3 [https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCl](https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2021.pdf)
4 [eaningManual2021.pdf](https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2021.pdf)).

5
6 SCS has drafted a contingency plan to outline potential impacts and
7 response to an inadvertent release of drilling fluid for locations where
8 horizontal directional boring will occur.

9
10 **Q: If the final project route changed from that provided in the**
11 **application, could the potential aquatic environment impacts**
12 **change?**

13 A: Yes.

14
15 **Q: Do any State threatened or endangered species have the potential to**
16 **be impacted by the MCE project?**

17 A: Yes, the state endangered Lined Snake (*Tropidoion lineatum*), could
18 potentially be present within the project area. Lined snakes are a small,
19 fossorial snake species that typically inhabit undisturbed prairies along
20 woodland corridors. This species of snake is primarily nocturnal and can
21 be difficult to observe. Construction of the MCE pipeline could temporarily
22 impact lined snake habitat that is present within the project area. Direct
23 mortality (e.g. crushing) could occur during construction if lined snakes are

1 present within the project area, but were not detected with surveys. At the
2 time of filing this testimony, it is unclear whether above ground facilities
3 associated with the MCE will be constructed in or adjacent to potential
4 lined snake habitat.

5
6 The Northern Redbelly Dace (*Chrosomus eos*), a state threatened
7 species, is a small-bodied minnow that typically inhabits spring-fed
8 waterbodies and uses slower moving stretches of rivers and streams. The
9 Northern Redbelly Dace is known to occur in the West Fork of the
10 Vermillion River within the project area. GFP recommended that SCS
11 horizontally bore under streams where Northern Red Belly Dace are
12 known to occur in the project area.

13 The Topeka Shiner (*Notropis topeka*), a federally listed fish species could
14 also be impacted by construction of the MCE pipeline. The Topeka Shiner
15 is a small-bodied prairie stream fish. These fish typically inhabit mid-sized
16 prairie streams. Within the project area Topeka shiners are known to
17 inhabit: Shue Creek, Rock Creek, Redstone Creek and Pearl Creek.
18 Impacts to Topeka Shiners (and other federally listed species) will be
19 addressed by a Biological Assessment on behalf of the U.S. Army Corps
20 of Engineers. The Army Corps of Engineers will provide the Biological
21 Assessment to the USFWS for their review and subsequent Biological
22 Opinion. The Biological Assessment was not available to review at the
23 time of filing this testimony.

1

2 **Q: Does GFP have any recommendations on how to avoid, minimize or**
3 **mitigate impacts to listed species from the construction of the MCE**
4 **pipeline project?**

5 A: Yes. GFP recommended that MCE use horizontal directional drilling for
6 any stream crossings where Topeka Shiners or Northern Redbelly Dace
7 could be present. However, as mentioned above, the USFWS has
8 authority over the federally listed Topeka Shiner and mitigation measures
9 will likely be outlined in the biological assessment.

10

11 GFP provided minimization and mitigation measures related to lined snake
12 in our original siting letter to SCS. As mentioned above, GFP presumes
13 presence of lined snakes where potentially suitable habitat occurs if
14 adequate surveys could not be performed. At the time of filing of this
15 testimony, SCS has not provided any additional avoidance or minimization
16 measures for GFP's consideration.

17 **Q: Does GFP have any recommendations on how to avoid, minimize or**
18 **mitigate impacts to other species of concern from the construction**
19 **of the MCE pipeline project?**

20 A: Yes. GFP provided SCS with voluntary seasonal buffers regarding
21 construction timing around prairie grouse leks, as well as recommended
22 seasonal buffers regarding construction near raptor nests (CPW 2020).
23 During consultations between GFP and SCS, the project agreed to

1 implement a seasonal no-construction buffer of 0.5 miles around active
2 leks from March 1 to June 30, and a seasonal no-construction buffer from
3 ½ hour before sunrise to 2 hours after sunrise from March 1 to June 30 for
4 leks between 0.5 miles and two miles from the centerline. These buffers
5 were derived from the GFP Prairie Grouse Management Plan, and agreed
6 upon by GFP and SCS and their wildlife consultants in a meeting held
7 September 16, 2022.

8

9 **Q: Are there any GF&P owned lands or other public lands that may be**
10 **impacted by the project?**

11 A: Based on the information provided in the application, the Shaner GPA
12 which is located near Mina Lake is proposed to be impacted by this
13 project.

14

15 **Q: Does the project route cross any walk-in areas that are open to**
16 **public hunting?**

17

18 A: Based on information provided in the application, it is unclear whether
19 walk-in-area parcels may be impacted by the project. Walk-in-areas are
20 properties that are privately owned and have an agreement with GFP
21 which opens them to free public access for hunting.

22

1 **Q: Does GF&P request SCS to coordinate closure of walk-in areas**
2 **during construction activities? If yes, how would GF&P like SCS to**
3 **coordinate closure of those areas.**

4
5 A: Yes. GFP requests that the applicant be required to contact the
6 department at least 60 days prior to the start of construction to coordinate
7 public access to walk-in areas that may be temporarily disrupted due to
8 construction activities.

9
10 **Q: You mentioned the applicant requested data from the Natural**
11 **Heritage Database. What is the South Dakota Natural Heritage**
12 **database? What type of information does it contain?**

13 A: The South Dakota Natural Heritage database tracks species at risk.
14 Species at risk are those that are listed as threatened or endangered at
15 the state or federal level or those that are rare. Rare species are those
16 found at the periphery of their range, those that have isolated populations
17 or those for which we simply do not have extensive information on.

18
19 This database houses and maintains data from a variety of sources
20 including site-specific surveys, research projects and incidental reports of
21 species that cover a time period from 1979 to the present. It is important to
22 note that the absence of data from this database does not preclude a
23 species presence in the proposed project area.

1

2 **Q: In summary, does GF&P offer any specific permit recommendations**
3 **should the permit be granted?**

4 A: GFP recommends memorializing the lined snake, and prairie grouse
5 mitigation measures proposed above in the form of a permit condition.

6

7 **Q: Does this conclude your testimony?**

8 A: Yes.

1 Literature Cited

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3 grassland birds. Report developed for: U.S. Fish and Wildlife Service,
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- 9 Bauman, P. 2020. Best management practices guide for restoration of native
10 grasslands and sensitive sites resulting from energy or industrial
11 development. South Dakota State University Extension. 12 pp. Available
12 online at: [https://extension.sdstate.edu/sites/default/files/2020-09/P-](https://extension.sdstate.edu/sites/default/files/2020-09/P-00184.pdf)
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15 lands in eastern South Dakota: 2013. South Dakota State University.
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17 Seasonal Restrictions for Colorado Raptors. 11p.
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20 Pothole Region. Journal of Fish and Wildlife Management, 1:38-42.
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- 1 Shaffer, J.A., and J.P DeLong. 2019. The effects of management practices on
2 Grassland Birds-An introduction to North American grasslands and the
3 practices used to manage grasslands and grassland birds. USGS
- 4 Wright, C. K., and M. C. Wimberly. 2013. Recent land use change in the Western
5 Corn Belt threatens grasslands and wetlands. Proceedings of the National
6 Academy of Sciences 110:4134-4139.

Hilary A Morey

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Education

2011 M.S. Wildlife and Fisheries Science-Fisheries Option. South Dakota State University (SDSU), Brookings, SD.

Thesis: Influence of Diet and Environmental Variation on Physiological Responses of Juvenile Pallid Sturgeon (*Scaphirhynchus albus*).

2009 B.S. Fisheries and Water Resources-Fisheries Option, and Biology with Aquaculture minor. University of Wisconsin-Stevens Point (UWSP), Stevens Point, WI.

Professional Experience

Environmental Review Senior Biologist October 2018-present

SD Game, Fish and Parks, Pierre, SD

I review proposed development projects in the state of South Dakota for potential impacts to federal and state threatened and endangered species and their habitats. I review relevant scientific literature, and official reports related to habitat conservation, habitat restoration, wildlife ecology, and impacts of development on sensitive species and incorporate evidence into recommendations for developers to avoid and minimize conflicts with wildlife and wildlife habitat. I provide relevant scientific information and testimony to the South Dakota Public Utilities Commission related to wind energy, solar energy and pipeline projects at evidentiary hearings and through official correspondence. I serve as a co-principle investigator on two State Wildlife Grants (T-94-R-1: Prairie Grouse Ecology in Relation to the Sweetland Wind Energy Facility and T-92-R-1-Estimating Raptor Density at Two Wind Energy Facilities in Northeastern South Dakota).

Fisheries Biologist

April 2013 – October 2018

SD Game, Fish and Parks, Ft. Pierre, SD

I lead and assisted field crews to complete biological surveys (gill and fyke-nets, electrofishing, hydroacoustics, etc.) on Lake Sharpe and Lake Oahe in central South Dakota. I assisted with annual report review and preparation, manuscript preparation, manuscript reviews, creating presentations for public outreach, creating professional presentations, and writing and reviewing research proposals to secure project funding. I hired, trained, supervised and mentored seasonal fisheries technicians (1-2 per field season) and assisted with mentoring and training numerous fisheries interns.

Biological Science Technician (Fisheries)

December 2011 – April 2013

U.S. Fish and Wildlife Service, Columbia, MO.

I lead and assisted field crews to complete biological assessments on the lower Missouri River related to the Pallid Sturgeon Population Assessment Program. I also lead electrofishing and eDNA sampling crews in the Chicago Area Waterway System (CAWS) to assist with multi-state monitoring efforts for invasive silver and big-head carp presence. I was responsible for writing annual reports, paper datasheet quality control, analyzing long-term datasets for the Pallid Sturgeon Population Assessment Program. I participated in and assisted in coordinating multiple outreach and education events throughout central Missouri. I assisted with the development of new station projects and performed data analysis as needs arose. I presented results of such analyses in the form of technical presentations to stakeholder groups and peer groups at professional meetings.

Graduate Research Assistant (M.S.)

June 2009 – November 2011

South Dakota State University, Brookings, SD.

I conducted research on pallid sturgeon physiology, including the effects of diet and temperature regime on growth, food consumption and metabolism. I maintained the U.S.G.S. cooperative research unit wet lab at SDSU, where we housed 48 federally endangered pallid sturgeon and supervised and trained technicians. I presented the results of my research in the form of posters and technical presentations.

Professional Affiliation

2004 – Present

American Fisheries Society

National Chapter (2009-Present)

Fisheries Management Section (2013- 2018)

Education Section (2010-2018)

Genetics Section (2009-2018)

Dakota Chapter (2009-present)

2012 - 2018	North American Sturgeon and Paddlefish Society
2018-Present	The Wildlife Society (National Chapter) South Dakota Chapter
2018-Present	National Association of Wetland Managers (formerly Association of State Wetland Managers)

Professional Service

Energy Committee Chair	2022
South Dakota Chapter of the Wildlife Society	
Wind Wildlife Working Group Member	2021-Present
Association of Fish and Wildlife Agencies	
Energy and Wildlife Policy Committee Member	2020-Present
Association of Fish and Wildlife Agencies	
Wind Energy Work Group Chair	July 2020-June 2022
Midwest Landscape Initiative Midwest Association of Fish and Wildlife Agencies	
Mentor	2020-Present
The Wildlife Society-South Dakota Chapter	
Wind Energy Work Group Member	2019-Present
Midwest Landscape Initiative Midwest Association of Fish and Wildlife Agencies	
Technical Committee Member	2019-Present
Midwest Landscape Initiative Midwest Association of Fish and Wildlife Agencies	
Crucial Habitat Assessment Tool Policy Committee	2019-Present
Western Association of Fish and Wildlife Agencies	
AFS Professional Certification Committee	2017-2020
American Fisheries Society	

Board Member at Large	2017-2018
North American Sturgeon and Paddlefish Society	
Secretary	2015-2018
North Central Division AFS Walleye Technical Committee	
Young Professional Committee Member	2013-2018
Fisheries Management Section of AFS	
Committee Chair	2013-2014
North Central Division AFS Walleye Technical Committee	
Peer Reviewer	2009-Present
Fisheries Management and Ecology, Transactions of the American Fisheries Society, Prairie Naturalist.	

Awards

- 2018 Outstanding Performance Award South Dakota Game, Fish and Parks
- 2018 Best Professional Poster Award Dakota Chapter AFS (co-author)
- 2017 Best Professional Poster Award Dakota Chapter AFS (co-author)
- 2017 Emerging Leader Mentorship Award American Fisheries Society
- 2016 Best Professional Poster Award Dakota Chapter AFS (lead author)
- 2016 Award of Merit American Fisheries Society Fish Management Section
- 2014 MICRA Sturgeon and Paddlefish Committee Travel Award
- 2011 American Fisheries Society John E. Skinner Memorial Award
- 2011 Honorable Mention for Best Student Poster Competition, 141st Annual Meeting of the American Fisheries Society, Seattle, WA.

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- Meyer, HA, CJ Ridenour, WJ Doyle and TD Hill. 2012.** Influence of flow regime on the condition of blue suckers in the lower Missouri River. 142nd Annual Meeting of the American Fisheries Society, St. Paul, MN.
- Meyer, HA, CJ Ridenour, WJ Doyle and TD Hill. 2012.** Lateral distribution of *Scaphirhynchus* sturgeon during flood flows in the lower Missouri River: 2010 case study. Mississippi Interstate Cooperative Resource Association Sturgeon and Paddlefish Committee Annual Meeting, Kirkwood, MO.
- Meyer, HA, SR Chipps, BDS Graeb, and RA Klumb. 2011.** Latitudinal variation in pallid sturgeon physiology. 141st Annual Meeting of the American Fisheries Society, Seattle, WA.
- Meyer, HA, SR Chipps, BDS. Graeb, and RA Klumb. 2011.** Growth and energy status of age-0 pallid sturgeon fed a commercial or invertebrate diet (Poster). 141st Annual Meeting of the American Fisheries Society, Seattle, WA.

Training Received

Leadership SD State Government Program	April-October 2022
Wetland Delineation Wetland Training Institute	May 2022
Reflections on Agency Management Association of Fish and Wildlife Agencies	March 2021
Adaptive Leadership Principles Association of Fish and Wildlife Agencies	July 2020
Mitigation Banking and In-Lieu Fee Program Interagency Review Team Training The Conservation Fund	June 2019
Writing and reviewing NEPA documents ShIPLEY Group	March 2019

Overview of the NEPA Process
Shiple Group

January 2019

Nationwide Permits
Wetland Training Institute

January 2019

S.C.U.B.A.-Openwater Diving
SSI

October 2017

Program MARK Workshop
Iowa State University

July 2017

R for Fisheries Scientists
Michigan State University/American Fisheries Society

August 2013



SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

523 EAST CAPITOL AVENUE | PIERRE, SD 57501

February 16, 2022

John Beaver
WESTECH Environmental Services Inc.
PO Box 6045
Helena, MT 59604

RE: Summit Carbon Solutions
Midwest Carbon Express Project
Proposed Carbon Capture Pipeline
SD Public Utilities Docket HP22-001
South Dakota Game, Fish and Parks Siting Recommendations

Dear John,

Thank you for contacting South Dakota Game, Fish and Parks (GFP) regarding the proposed Midwest Carbon Express carbon capture and sequestration pipeline project in Beadle, Brown, Clark, Codington, Edmunds, Hamlin, Hand, Hyde, Kingsbury, Lake, Lincoln, McCook, McPherson, Miner, Minnehaha, Roberts, Spink, Sully, and Turner counties, South Dakota. The proposed project would include the construction of approximately 469 miles of underground pipeline through South Dakota as well as 4 pump stations, 16 mainline valves, 5 launcher-receiver sites, 8 contractor/laydown yards and 5.22 miles of access roads.. We strive to collaborate with developers to balance wildlife conservation with development in our state. The purpose of this letter is to provide biological information, siting recommendations (e.g. avoidance, minimization and mitigation measures) and wildlife survey recommendations for the development and siting of the proposed project. We have prepared the following information to address environmental concerns regarding threatened, endangered, and rare species, areas of high conservation value, and species of concern in South Dakota. Impacts to wildlife and their associated habitats can be minimized by using responsible, wildlife friendly siting recommendations early in the project planning stage of development.

The Midwest Carbon Express project was originally introduced to GFP in September of 2021 via a request for data from the South Dakota Natural Heritage Database. In January of 2022, a project was submitted to the South Dakota Environmental Review Tool that included the footprint of the Midwest Carbon Express Project. GFP staff was contacted in mid-January 2022 by WESTECH Environmental Services requesting a consultation for Threatened and Endangered species and potential survey recommendations for the project. GFP Staff met with WESTECH on January 25th 2022, via Microsoft Teams. GFP appreciates the early engagement with us at this stage of project planning. We are providing this letter as a follow-up to that meeting, and to document our wildlife related concerns and recommendations for the Midwest Carbon Express Project.



SOUTH DAKOTA NATURAL HERITAGE DATABASE

The South Dakota Natural Heritage Program monitors species at risk. Species at risk are those that are listed as threatened or endangered at the state or federal level or those that are rare. Rare species in South Dakota are found at the periphery of their range, have isolated populations or are species of which we simply do not have extensive information. A list of species monitored by the Heritage Program can be found at <https://gfp.sd.gov/natural-heritage-program/>. We recommend a **yearly database search**, to ensure that developers are aware of changing patterns in wildlife use at a site. **Please note many places in South Dakota have not been surveyed for rare or protected species and the absence of a species from the database does not preclude its presence from your project area.**

Species records can be requested through the Natural Heritage Program at this link: <https://gfp.sd.gov/forms/heritagedata/>. Alternatively, GFP has an online Environmental Review Tool available for project planning purposes: <https://ert.gfp.sd.gov/>. This tool is free to use and has a number of publicly available spatial layers as well as the capability to generate a report of species that may be present. Please note that this tool will not give specific locations of sensitive species; only a list of species that may be found in the project area. Perennial Environmental services submitted a project to the environmental review tool, and a resulting report (Project ID: 2022-01-11-262) was generated and provided to the project proponent. The results in the report include any species within 5 miles of the proposed project area. We have attached an updated copy of the resulting report to this letter for your reference.

We have completed an initial search of the project area and found the following records within 1 mile of the proposed project boundary:

- Topeka Shiner (*Notropis topeka*), federally endangered
- Whooping Crane (*Grus americana*), Federally and state endangered
- Lined Snake (*Tropidoclonion lineatum*), state endangered
- Northern Redbelly Dace (*Chrosomus eos*), state threatened
- Bald eagle (*Haliaeetus leucocephalus*) nest, protected by Bald and Golden Eagle Protection Act (BGEPA)
- Swainson's Hawk (*Buteo swainsoni*) nest; protected by the Migratory Bird Treaty Act (MBTA), multiple records
- Ferruginous Hawk (*Buteo regalis*) nest; protected by the MBTA, multiple records
- Cooper's Hawk (*Accipiter cooperii*) nest; protected by the MBTA
- Great Blue Heron (*Ardea Herodias*) nesting colony; protected by the MBTA

HABITATS IMPORTANT TO CONSERVATION IN SOUTH DAKOTA

Native Grasslands

Grasslands are of high conservation value in South Dakota, and many acres are converted to cropland annually. Approximately 70% of the native mixed-grass prairie has been lost in eastern South Dakota, and approximately 32% has been lost in western South Dakota (Wright and Wimberly 2013, Bauman et al. 2016, Bauman et al. 2016). All grasslands within the project boundary should be identified. Untilled grasslands, large grassland blocks and grasslands with native plant species are of particular importance and special care should be taken to avoid these areas. Other grassland types such as native rangeland, grazed grasslands (with native plant species), pasture (grazed grasslands with non-native plant species), and Conservation Reserve Program lands (formerly tilled lands planted to vegetative cover for erosion control and wildlife habitat) also serve as wildlife habitat. Placement of project infrastructure in contiguous blocks of grasslands causes fragmentation and result in less suitable habitat for grassland dependent species. Early identification of grassland areas provides the information needed to avoid further grassland loss, degradation, and fragmentation. Game, Fish and Parks recommends using both the National Land Composition Data (NLCD) layer and a layer available from the SDSU Extension office that identified potentially undisturbed lands in eastern South Dakota (Bauman et al. 2016) to identify and quantify grassland habitats that may be impacted by the construction of this project. The report and associated spatial layer associated with Bauman et al. (2016) can be found at:

<https://openprairie.sdstate.edu/>.

Our initial review of the proposed project area indicates there are relatively large proportions of potentially undisturbed grasslands within the proposed project area in McPherson, Hyde and Hand counties. Potentially undisturbed grasslands also occur in portions of Brown, Spink and Sully counties. The majority of grassland resources in the remaining project area (southeast South Dakota) occur near riparian areas and associated with locations where the proposed project crosses streams (Big Sioux River, Timber Creek, James River etc.), with the remainder of the proposed project area being located in agricultural and other disturbed lands.

Grasslands should not be “ranked” or considered less important solely based on height of grass or composition of species. Some grassland dependent species such as Sharp-Tailed Grouse (*Tympanuchus phasianellus*), Baird’s Sparrow (*Centronyx bairdii*), and Northern Harriers (*Circus hudsonius*) require grassland patches with relatively tall (12 inches or more) vegetation and accumulation of residual litter characterized by light grazing pressure (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Other species such as Ferruginous Hawks (*Buteo regalis*), Burrowing Owl (*Athene cunicularia*), Thick Billed Longspur (*Rhynchophanes mccownii*), and Chestnut-collared Longspur (*Calcarius ornatus*) require open expanses of grasslands characterized by short vegetation that is typical of moderate to heavy grazing pressure (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Sprague’s Pipit (*Anthus spragueii*), Long-billed Curlew (*Numenius americanus*), Bobolink (*Dolichonyx oryzivorus*) and Dickcissel (*Spiza americana*) require grasslands with moderate grass heights and periodic disturbance from grazing, mowing or prescribed fire (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Although various patches of grassland habitat can appear in “better” or “worse” condition based on vegetation height and plant species composition, GFP considers all grassland habitat as important for wildlife based on the information presented above.

Wetlands and Streams

The prairie pothole region of South Dakota supports a wide diversity of bird species (~80 species; Johnson et al. 1997). All wetlands and other waterbodies within the project boundary should be identified and delineated. Note that wetland delineation should occur during time periods when a basin typically holds water (late spring-early summer) and that the spatial extent of a wetland may change

within or among years. Please see the US Army Corps of Engineers Midwest Regional Supplement for details on prairie pothole wetland delineation (USACE 2010). We recommend avoiding siting the project in wetlands, streams or within a wetland complex (multiple wetland basins adjacent to each other that may be hydrologically connected). Wetland complexes support higher species richness compared to isolated wetlands of similar size (Naugle et al. 1999). If streams (particularly stream crossings where Topeka Shiners or Northern Redbelly Dace may be present) cannot be avoided, we recommend horizontal directional drilling to avoid impacts to this federally endangered species.

Invasive and Non-native Plant Species

Ground disturbing activity can increase opportunity for the introduction and establishment of invasive, non-native plant species. Based on the information listed above, GFP recommends controlling noxious weeds at the project site, as well as revegetating with native, weed-free seed mixes.

SPECIES OF CONCERN

Grassland Nesting Birds

Grassland nesting bird populations have been declining faster than any other bird group in North America (Peterjohn and Sauer 1999, Rosenberg et al. 2019). Many grassland nesting bird species require large tracts of open, contiguous grasslands. Placement of project infrastructure (e.g. roads) in large, intact grassland parcels can fragment habitat and displace certain species of grassland dependent birds such as Western Meadowlark (*Sturnella neglecta*), Upland Sand Piper (*Bartramia longicauda*), Grasshopper Sparrow (*Ammodramus savannarum*), Chestnut Collared Longspur (Pruett et al. 2009, Shaffer and Buhl 2015, Bakker 2020). While it would be difficult to make recommendations for each individual species of grassland bird that may be affected by energy development, GFP considers the presence of prairie grouse (Sharp-tailed Grouse and Greater Prairie Chickens), and in particular lek locations to be indicators of high-quality grassland habitat and a robust ecological community due to their specific habitat needs (large tracts of intact grasslands). Therefore, many of our recommendations are based upon spatially explicit habitat models developed by GFP and USFWS for prairie grouse in South Dakota (Runia et al. 2021). The South Dakota Environmental Review Tool includes a conservation planning layer titled “Sharp-tailed grouse habitat prioritization” and “Greater Prairie Chicken habitat prioritization” that may be helpful to review. It appears that this project primarily occurs in Tier II Sharp-tailed grouse habitat. Please note that data in the Environmental Review Tool cannot be downloaded. However, if you would like to obtain a copy of the shapefile with the Sharp-tailed Grouse and Greater Prairie Chicken (hereafter Prairie Chicken) habitat types in a compatible format for desktop evaluation, please contact GFP.

To avoid impacts to prairie grouse and other grassland nesting bird populations, GFP first and foremost recommends avoiding siting project infrastructure in grassland habitat, particularly areas of the state that have been identified as Tier 1 and Tier 2 Sharp-tailed Grouse habitat or Tier 1, 2 and 3 habitat for Greater Prairie Chicken. Tier I priority Sharp-tailed Grouse habitat is estimated to support approximately 20% of the Sharp-tailed grouse population in South Dakota and encompasses approximately 3.7% of the land mass of eastern South Dakota. Tier II priority Sharp-tailed grouse habitat is estimated to support an additional 20% of the population in eastern South Dakota and encompasses approximately 5% of the land mass of eastern South Dakota. Overall, 18.7% of eastern South Dakota land mass was categorized as Tier 1, 2 or 3 priority Sharp-tailed grouse habitat. This area is estimated to support 64% of the Sharp-tailed grouse population in eastern South Dakota. Tier I priority Prairie Chicken habitat is estimated to support approximately 22% of the population in eastern South Dakota and encompasses approximately 1.9% of the land mass of eastern South Dakota. Tier II priority Prairie Chicken habitat is estimated to support an additional 24% of the population in eastern South Dakota and encompasses approximately 5.8% of the land mass of eastern South Dakota. Overall, 11.2% of the eastern South Dakota land mass

was categorized as Tier 1, 2 or 3 priority Prairie Chicken habitat. This area is estimated to support 67% of the Prairie Chicken population in eastern South Dakota.

If grassland habitat cannot be avoided, we recommend minimizing impacts to prairie grouse by using a 1-mile setback of project infrastructure from any documented prairie grouse leks. This 1-mile buffer recommendation is based on data collected on hen prairie grouse in the Fort Pierre National Grasslands (Kirschenmann 2008). Kirschenmann (2008) reported mean distance from lek of capture to nest sites was approximately 1 mile (1.98 km for prairie chickens and 2.03 km for sharp-tailed grouse). The recommended buffer is intended to minimize disturbance from project infrastructure to important nesting and brood-rearing habitat. If grassland habitats and lek sites cannot be avoided, we further recommend a two mile no construction buffer during the lekking season, 1 March to 30 June. Prairie grouse are sensitive to noise disturbance, and construction near leks could cause birds to abandon leks. Lek based avoidance and minimization measures are only effective if pre-construction lek surveys are completed within the project area. GFP has a limited database with historic lek locations, but many of these areas are not surveyed on a routine basis. GFP has included a separate document with detailed information on prairie grouse lek survey guidelines.

If impacts to grassland habitats cannot be avoided, GFP may recommend mitigation in the form of voluntary habitat offsets/compensation. Shaffer et al. (2019) provides a science-based framework that calculates biological values lost by development in grassland or prairie pothole habitats. We suggest using this framework and associated models to estimate impacts and develop a voluntary habitat offset plan. GFP employs several private lands habitat biologists, partners with several habitat conservation organizations and can assist with development of habitat offset/improvement plans. Examples of potential voluntary conservation measures could include (but are not limited to): working with landowners to create grazing management plans to enhance existing grassland habitats and increase forage production for livestock, installation of grazing infrastructure (water lines, fencing, etc.) to assist with rotational grazing, cedar removal in areas where encroachment is a threat to grasslands, conservation easements, prescribed burning plans, etc. Please contact us if you have any questions or would like to learn more about ways to improve or enhance working lands and existing grassland habitat in and around the project area.

Topeka Shiner-Federally Endangered

The Topeka Shiner is a small-bodied prairie stream fish. These fish typically inhabit mid-sized prairie streams. Topeka shiners are known to inhabit: Shue Creek, Rock Creek, Redstone Creek and Pearl Creek within the project area. We have also created a shapefile of streams where Topeka Shiners are known or presumed to be present to share with the project for planning purposes. To avoid impacts to Topeka Shiner, we recommend horizontal directional drilling at any stream crossings where Topeka Shiner are known to occur. Under Section 7 of the Endangered Species Act, the U.S. Fish and Wildlife Service has authority over federally listed species. We urge you to coordinate with the U.S. Fish and Wildlife Service South Dakota Ecological Services office further on this matter.

Whooping Crane-Federally and State Endangered

The whooping crane is a state and federal endangered species with only one naturally occurring population. Members of this population pass through South Dakota as they migrate to and from Aransas National Wildlife Refuge in Texas to Wood Buffalo National Park in Canada. Whooping Cranes can be spotted almost anywhere in South Dakota during migration. However, reported sightings are most frequent near central South Dakota. Under Section 7 of the Endangered Species Act, the U.S. Fish and Wildlife Service has authority over federally listed species. We urge you to coordinate with the U.S. Fish and Wildlife Service South Dakota Ecological Services office further on this matter.

Lined Snake-State Endangered

Lined snakes typically inhabit remnant, undisturbed prairie habitats, particularly along woodland corridors. They are most often observed by searching under objects they are sheltering under, such as rocks and logs. In South Dakota, lined snakes have a limited population and are typically found along the Big Sioux River, as far north as Palisades State Park. Lined snakes are active from April through October. Roads can be a major source of mortality for this species of snake. You can find more information on lined snake biology and habitat needs here: https://www.sdherps.org/species/tropidoconion_lineatum.

The most likely location for lined snake to occur within the project area is along the Big Sioux River at the South Dakota/Iowa border. We recommend completing visual surveys along the pipeline route in lined snake habitat at this location. Visual surveys should occur during the active season (April-October).

If lined snakes are encountered during the construction phase of the project we recommend the following avoidance measures:

- Lined snakes could use construction material staging areas as shelter during the active season. When staging construction materials near lined snake habitat, we recommend elevating those materials slightly off the ground, in order to allow snakes to escape when materials are removed.
- If the project requires trenching for installation of infrastructure, we recommend backfilling the trench at the end of each workday (April-October), so snakes cannot fall into open trenches and to be trapped and buried under fill. If trenches cannot be filled prior to the end of the workday, we further recommend covering open trenches and inspecting open trenches left overnight for endangered snake species prior to backfilling.

If lined snakes are encountered during pre-construction surveys or during project construction, please contact Eileen Dowd Stukel (605-773-4229 or Eileen.DowdStukel@state.sd.us) for further consultation.

Northern Redbelly Dace-State Threatened

The Northern Redbelly Dace is a small-bodied minnow that typically inhabits spring-fed waterbodies, and use slower moving stretches of rivers and streams. Northern Redbelly Dace is known to occur in the West Fork of the Vermillion River within the project area. We have also created a shapefile of streams where Northern Redbelly Dace are known or presumed to be present to share with the project for planning purposes. To avoid impacts to Northern Redbelly Dace, we recommend horizontal directional drilling at any stream crossings where Northern Redbelly Dace are known to occur.

Bald Eagles- Protected

Bald Eagle populations have been increasing across South Dakota in recent years. We documented at least one Bald Eagle nest within the immediate vicinity of the proposed project area. We recommend surveying the project route for active Bald Eagle nests prior to construction. We further recommend consulting with the USFWS on survey methodology, as the USFWS has the authority over protection of Bald and Golden Eagles under the Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act specifically protects these two eagle species by prohibiting take, possession, sale, purchase, barter, offer to sell, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest or egg, unless allowed by permit. A US Fish and Wildlife Service permit is needed to temporarily possess and relocate eagle nests, eggs, and young. If the project identifies Bald Eagle

nests within the project area, we typically recommend a 0.5 mile buffer during the active nesting season (February-August).

Raptors-Protected

Raptors such as Ferruginous Hawk, Swainson's Hawk and others are protected by the Migratory Bird Treaty Act. Under the Migratory Bird Treaty Act, it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export or transport any migratory bird, or any part, nest or egg of any such bird, unless authorized under a permit issued by the Secretary of the Interior. Take is defined in regulations as: "pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect." We found numerous records of raptor nests along the proposed project route. We recommend identifying raptor nests along the project route and applying appropriate species-specific seasonal timing restrictions as outlined in the document "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors (CPW 2020; <https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/Raptor-Buffer-Guidelines.pdf>).

OTHER CONSIDERATIONS

Public and Other Protected Lands

South Dakota is home to approximately 5 million acres of publicly accessible lands for hunting, fishing, and recreation. Public lands provide a multitude of recreational opportunities such as fishing, hunting, hiking, biking, bird watching, camping, boating, swimming, and educational opportunities. Public lands also provide a wide diversity of habitat that supports hundreds of species including birds, bats, amphibians, insects, and plants. To protect the recreational, educational, and biological integrity of these lands, they need to be identified early in the development process. Some areas may have special designations that prohibit wind energy facilities. Spatial information on public lands can be found at <https://gfp.sd.gov/maps/> or on our Environmental Review Tool. If GFP owned lands or private lands leased for hunting access (e.g. Walk-In-Area program) will be impacted by project activities, GFP requests to be notified of construction timelines and details of the potential disruption in order to notify the public of any impacts to these areas. If private lands leased for hunting access (Walk-In-Areas) will be permanently affected or hunting access prohibited, GFP may recommend voluntary mitigation/off sets to public access. Two Game Production areas (Grandpre and Leola Roadside Park; owned and managed by GFP) as well as numerous Waterfowl Production Areas (owned and managed by the USFWS) appear to be located immediately adjacent to or within the project boundary. It is not clear what, if any impacts will occur to these properties. If impacts are anticipated, or a temporary construction easement is required, please contact Paul Coughlin at 605-295-4892 or Paul.Coughlin@state.sd.us.

Powerlines

It does not appear that the project will include the installation of any new power lines, however we include the following information for project planning purposes. Powerline strikes and electrocutions are a known cause of mortality to birds. GFP recommends implementing mitigation measures described in The Avian Power Line Interaction Committee guidelines (<https://www.aplic.org/>). Additionally, GFP recommends avoiding placement of over-head powerlines adjacent to or between bodies of water (wetlands and lakes), as this could increase the risk of bird strikes, particularly for waterfowl. We further recommend burying collection and transmission lines when possible.

SUMMARY

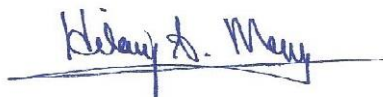
Thank you for the opportunity to provide comments on the proposed Midwest Carbon Express in South Dakota. We strive to work with developers to balance wildlife conservation with development in our

state. In summary, GFP recommends the following to avoid or minimize impacts to wildlife and wildlife habitats:

- Consulting with GFP and USFWS early and often during the development of the project
- Making annual data requests from the South Dakota Natural Heritage Database or the Environmental Review Tool
- Conducting desktop analysis of project area to assess initial risks to wildlife and wildlife habitat
- Conducting appropriate field surveys to assess wildlife habitat and wildlife use including, but not limited to:
 - Grouse lek surveys
 - Visual Lined Snake surveys along the Big Sioux River Crossing
 - Raptor nest surveys
 - Bald Eagle nest surveys
- Use results of wildlife field surveys to inform project siting (e.g. if a project identifies sensitive wildlife habitat or a resource rich area, the project should consider relocation)
- Calculating impacts of proposed project
- Avoid siting of project infrastructure in grassland, especially undisturbed grasslands
 - If grassland habitats cannot be avoided, minimize project footprints in grassland blocks or co-locate along already disturbed areas
 - Prepare a voluntary habitat offset/compensation plan for any unavoidable impacts to grassland habitats in the project area
- Site project infrastructure in previously disturbed areas as much as possible
- Avoid siting project infrastructure in wetlands, streams, or waterbodies, as well as in wetland complexes
- Horizontally Drill under any stream crossing where Topeka Shiners or Northern Redbelly Dace are known to occur

Please keep GFP involved in all future correspondence. We would appreciate a chance to review any proposed changes to the project footprint or specific information related to project infrastructure siting when it is available. For any additional questions or information, please contact me at 605.773.6208 or the email below.

Sincerely,



Hilary Morey
Environmental Review Senior Biologist
523 East Capitol Avenue
Pierre, SD 57501

hilary.morey@state.sd.us

cc: Charlene Bessken (USFWS Pierre)
Darren Kearny (SD PUC)

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