



# SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

523 EAST CAPITOL AVENUE | PIERRE, SD 57501

January 25, 2022

Laurid Broughton  
Environmental Solutions & Innovations, Inc.  
4525 Este Ave.  
Cincinnati, OH 45232

RE: Heartland Greenway-Navigator  
Proposed Carbon Capture Pipeline  
Brookings, Minnehaha and Moody Counties, South Dakota  
South Dakota Game, Fish and Parks Siting Recommendations

Dear Laurid,

Thank you for contacting South Dakota Game, Fish and Parks (GFP) regarding the proposed Heartland Greenway Navigator carbon capture and sequestration pipeline project in Brookings, Minnehaha and Moody Counties, South Dakota. The proposed project would include the construction of approximately 60 miles of underground pipeline through South Dakota. We strive to collaborate with developers to balance wildlife conservation with development in our state. The purpose of this letter is to provide 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 Heartland Greenway project was originally introduced to GFP in October of 2021 via a submission to our online environmental review tool. Shortly after the project submission, representatives from GFP as well as the South Dakota Department of Agriculture and Natural Resources met with representatives from Environmental Solutions & Innovations (ESI) to discuss the project and any permitting needs from each respective agency. During that meeting, GFP made ESI aware of potential threatened or endangered species present in the project area, as well as our role in permitting. 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 Heartland Greenway 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. ESI submitted a project to the environmental review tool, and a resulting report (Project ID: 2021-10-21-163) 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 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
- Powesheik Skipperling (*Oarisma powesheik*), federally endangered; last observed in 1995
- Lined Snake (*Tropidoclonion lineatum*), state endangered

## **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 that a majority of the land cover is in agricultural production. The majority of grassland/hayland resources are present near riparian areas and associated with locations where the proposed project crosses major streams (Big Sioux River, Split Rock Creek, etc.).

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 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 (*Sternella neglecta*), Upland Sand Piper (*Bartramia longicauda*), Grasshopper Sparrow (*Ammodramus savannarum*), Chestnut Collared Longspur (Pruett et al. 2009, Shaffer and Buhl 2015, Bakker 2020). We recommend avoiding grassland habitats during project siting. If grassland habitats cannot be avoided, we recommend minimizing disturbance to these areas by siting project infrastructure along previously disturbed areas, such as road rights-of-way.

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 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.

### **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](https://www.sdherps.org/species/tropidoconion_lineatum).

For project planning purposes, we recommend first completing a desktop habitat assessment to delineate any potential lined snake habitat within the project area. In particular, lined snakes and their habitat may occur along: Beaver Creek, Fourmile Creek and Split Rock Creek. After a desktop habitat assessment is completed, we further recommend completing visual surveys along the pipeline route in lined snake habitat. 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](mailto:Eileen.DowdStukel@state.sd.us)) for further consultation.

### **Poweshiek Skipperling-Federally Endangered**

The Poweshiek Skipperling is a prairie-dependent butterfly. These small butterflies typically inhabit remnant tallgrass and mixed grass prairie. To avoid impacting this species, we recommend avoiding siting project infrastructure in undisturbed grassland tracts. 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.

### **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: West Pipestone Creek, Brookfield Creek, Big Sioux River, Medary Creek, Split Rock Creek, Beaver Creek and Four Mile Creek within the project area. 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.

## **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. Palisades State Parks appears to be near, but not impacted by the proposed project. It is not clear if any impacts will occur to the state park. If impacts are anticipated, or a temporary construction easement is required, please contact the Park Manager (John Drummer) at 605-594-3824.

We also wanted to note that the project footprint appears to be adjacent to The Aurora Prairie tract, owned and managed by The Nature Conservancy. This property is located approximately 1.5 miles south of the town of Aurora, South Dakota. We recommend consulting with The Nature Conservancy if any impacts are proposed to this property.

### **Powerlines**

It's unclear whether this project will include the installation of any 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**

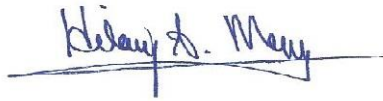
Thank you for the opportunity to provide comments on the proposed Heartland Greenway carbon capture and sequestration pipeline in Brookings, Minnehaha and Moody Counties, South Dakota. We

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
- 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 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,



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cc: Natalie Gates (USFWS Pierre)  
Darren Kearny (SD PUC)

Literature Cited

- Bakker, K.K. 2020. South Dakota species of habitat fragmentation concern: grassland birds. Report developed for: U.S. Fish and Wildlife Service, South Dakota Ecological Services Field Office, Pierre, SD, 38 pp.
- Bakker, K.K. 2005. South Dakota All Bird Conservation Plan. Developed for: South Dakota Department of Game, Fish and Parks. Wildlife Division Report 2005-09, Pierre, SD. Accessible online at: <https://gfp.sd.gov/UserDocs/nav/bird-plan.pdf>
- Bauman, P., B. Carlson T. Butler and R. Brad. 2016. Quantifying undisturbed (native) lands in eastern South Dakota: 2013. South Dakota State University Extension. 60 pp.
- Johnson, R.R., D.A. Granfors, N.D. Niemuth, M.E. Estey and R.E. Reynolds. 2010. Delineating grassland bird conservation areas in the U.S. Prairie Pothole Region. *Journal of Fish and Wildlife Management*, 1:38-42.
- Johnson, R.R., K.F. Higgins, M.L. Kjellsen and C.R. Elliot. 1997. Eastern South Dakota wetlands. Brookings: South Dakota State University. 28 pp.
- Naugle DE, Higgins KF, Nusser SM, Johnson WC. 1999. Scale-dependent habitat use in three species of prairie wetland birds. *Landscape Ecology* 14: 267–276.
- Rosenberg, K.V., A.M. Dokter, P.J. Blancher, J.R. Sauer, A.C. Smith, P.A. Smith, J.C. Stanton, A. Panjabi, L. Helft, M. Parr and P.P. Mara. 2019. Decline of the North American Avifauna. *Science* 336: 120-124.
- Shaffer, J.A., and J.P DeLong. 2019. The effects of management practices on Grassland Birds-An introduction to North American grasslands and the practices used to manage grasslands and grassland birds. USGS Professional Paper 1842, 63 pp., <https://doi.org/10.3133.pp1824A>.
- Shaffer, J.A., C.R. Loesch, and D.A. Buhl. 2019. Estimating offsets for avian displacement effects of anthropogenic impacts. *Ecological Applications* 29(8).
- Watson, R.T., P.S. Kolar, M. Ferrer, T. Nygard, N. Johnston, W.G. Hunt, H.A. Smit-Robinson, C. Farmer, M.M. Huso and T.E. Matzner. 2018. Raptor interactions with wind energy-case studies from around the world. *Journal of Raptor Research*. 52:1-18.
- Wright, C.K. and M.C. Wimberly. 2013. Recent land use change in the Western Corn Belt threatens grasslands and wetlands. *Proceedings of the National Academy of Science* 110: 4134-4139.