FINAL

FORT BERTHOLD INDIAN RESERVATION PROGRAMMATIC BIOLOGICAL ASSESSMENT BIOLOGICAL EVALUATION SECOND ADDENDUM

JUNE 2021

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INTRODUCTION AND BACKGROUND

The Endangered Species Act (ESA) was passed by Congress in 1973. The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. Section 2 of the ESA mandates that all federal departments and agencies seek to conserve endangered and threatened species and utilize their authorities in furtherance of the purposes of the ESA. Section 7 of the ESA directs all federal agencies to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. Section 7 also directs departments and agencies to ensure that their actions are not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of these species' critical habitats. It also requires all federal departments and agencies to consult with the Secretary of Interior or Secretary of Commerce (marine species only) whenever an authorized action is likely to affect a listed or proposed species and/or its critical habitat.

According to Section 7(c) of the ESA, the purpose of a biological assessment is to identify any endangered or listed species that are likely to be affected by the proposed action. *A Programmatic Biological Assessment Biological Evaluation for Fort Berthold Indian Reservation Oil and Gas Development* (hereafter BABE) was completed by the United States (U.S.) Bureau of Indian Affairs (BIA) in 2014 along with the *Revised Biological Assessment Biological Evaluation Addendum* (hereafter Revised BABE Addendum) in 2015. The U.S. Fish and Wildlife Service (USFWS) concluded informal consultation on June 4, 2014, and December 3, 2015, with the BIA in regards to the Proposed Action, as described in the BABE (BIA 2014) and the Revised BABE Addendum (BIA 2015). A biological evaluation assesses impacts to species protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the Bald and Golden Eagle Protection Act of 1940 (BGEPA).

This document, the *Fort Berthold Indian Reservation Programmatic BABE Second Addendum* (hereafter Second Addendum), serves as a second addendum to the BABE. This Second Addendum does not represent material changes to the project description for the Proposed Action, action area, or other conclusions for the BABE and the Revised BABE Addendum, but introduces new information indicating that the following species are no longer federally listed species or are no longer potentially found in the Project Area, per USFWS (2021a): endangered interior least tern (*Sternula antillarum*), endangered Poweshiek skipperling (*Oarisma poweshiek*), endangered black-footed ferret (*Mustela nigripes*), and endangered gray wolf (*Canis lupus*). Therefore, these species will not be further analyzed in this Second Addendum under the Proposed Action.

Additionally, this Second Addendum introduces updated federal guidance that has been published since the approval of the Revised BABE Addendum and new information for some of the species that were previously analyzed under the BABE and/or the Revised BABE Addendum. New information includes new survey data from multiple field surveys that have been conducted for the threatened and endangered species within the Project Area in accordance with the BABE and the Revised BABE Addendum. Therefore, this Second Addendum provides an update to certain species' occurrences and habitat use based on observations stemming from the implementation of the BABE and Revised BABE Addendum.

This document will not repeat the original reports but incorporates by reference the information available in the original BABE and the Revised BABE Addendum. This Second Addendum to the BABE is

prepared in accordance with the legal requirements set forth under Section 7 of the ESA (19 United States Code 1536 [c]).

PROJECT DESCRIPTION

This Second Addendum was developed in coordination with the *Mitigated Programmatic Environmental Assessment for Oil and Gas Development on the Fort Berthold Indian Reservation Project* (from hereon, FBIR PEA) that was approved June 2017 (BIA 2017). Under the FBIR PEA and this Second Addendum, the Proposed Action is granting right-of-way (ROW)/easement approvals and Application for Permit to Drill concurrence by BIA for the drilling of up to 1,740 wells from approximately 435 pads (an average of 4 wells per pad) for the exploration and production of oil and associated gas between 2016 and 2021 on the Fort Berthold Indian Reservation (FBIR). These wells would be drilled after permission to drill has been received from the U.S. Bureau of Land Management and the North Dakota Industrial Commission by the mineral leaseholders that are parties to the Proposed Action. The Proposed Action includes associated well pad construction; drilling and completion of the wells; construction of access roads; installation of oil, gas, fresh water and produced water flow lines; installation of buried electric utility lines; and other oil and gas related facilities.

To date, under the Proposed Action, approximately 204 wells and 32 well pads have been developed under the FBIR PEA[1]. Relative to the full development of number of wells anticipated under the Proposed Action, development is at 15 percent (%). However, relative to the full development of number of well pads anticipated under the Proposed Action, full development is at 7%. As seen in these percentages, the number of wells per well pad anticipated under the FBIR PEA have increased (i.e., from an average anticipated of 4 to 6.4), which has resulted in additional co-location of wells with multi-well pads. Multi-well pads reduce the amount of surface disturbance by concentrating wells and associated equipment for drilling, completion, and production phases, which in turn reduces habitat loss and fragmentation and other impacts from surface disturbance (e.g., development and/or reclamation of well pads, access roads, existing roads, construction, and other development, etc.). Nonetheless, though development of wells has only progressed 15% and development of well pads has only progressed at 7% of projected development under the FBIR PEA, the BIA has determined that in order to be as conservative as possible and to reduce potential impacts to threatened and endangered species and habitat from the Proposed Action as much as possible, a future review of this ESA compliance document (i.e., Second Addendum) will be necessary. In addition, the BIA would continue to track and conduct periodic reviews of all activities conducted under the BABE, as needed.

See the FBIR PEA and BABE for more information.

ACTION AREA

The action area, or Project Area, for the Proposed Action is the entire FBIR. The FBIR is the home of the Mandan, Hidatsa, and Arikara (MHA) Nation, which is comprised of the Mandan, Hidatsa, and Arikara tribes. The FBIR encompasses approximately 1 million acres, of which almost half is held in trust by the U.S. for either the MHA Nation or individual Native Americans (known as allottees). The FBIR is located

[1] As of October 2019. Note that a few additional well pads/wells were approved under the BABE Revised Addendum before the FBIR PEA was approved, but for clarity purposes, these are not included in the statistics of development completed, to date.

in six counties in west-central North Dakota: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward. Elevation on the FBIR ranges from 1,840 to 2,600 feet.

See the BABE for more information, including a map of the Project Area.

THREATENED AND ENDANGERED SPECIES

An updated list, per USFWS (2021a), indicates the following threatened or endangered species may be present on the FBIR and therefore, will be evaluated in this Second Addendum (Table 1). Further, Table 1 provides additional information on the status of the species and their occurrences relative to the information previously provided in the BABE and Revised BABE Addendum. If no changes to the species description, habitat, and/or occurrences have occurred since the USFWS' concurrences; mitigation measures do not need further review; and/or updated guidance from federal or state agencies have not been published, then the species will not be analyzed in this Second Addendum. This analysis determination is provided in Table 1. Note, the conservation measures in the BABE and Revised BABE Addendum still apply to measures that are not reiterated or modified in this addendum. In contrast, if changes to the species description, habitat, or variation in the expected occurrences have taken place since the USFWS' concurrences; mitigation measures need further review; and/or updated guidance from federal or state agencies have been published, then the species will be analyzed in this Second Addendum. This analysis determination is also provided in Table 1.

Table 1. Threatened and Endangered Species that May Occur in the Project Area that May Be Affected by the Proposed Action

Common Name	Scientific Name	Status	Status Relative to the BABE and Revised BABE Addendum	Analysis Determination
Dakota skipper	*Hesperia dacotae*	Threatened	Variation in expected occurrences/habitat have occurred	Review
Northern long-eared bat	*Myotis septentrionalis*	Endangered	Additional formal guidance released	Review
Pallid sturgeon	*Scaphirhynchus albus*	Endangered	No changes	No further review
Piping plover and critical habitat	*Charadrius melodus*	Threatened	No changes	No further review
Rufa red knot	*Calidris canutus rufa*	Threatened	No changes	No further review
Whooping crane	*Grus americana*	Endangered	No changes	No further review

No further review: No further review or update is necessary. The species was reviewed and no changes to the species description, habitat, and/or expected occurrences have occurred since the USFWS' concurrences; mitigation measures do not need further review; and/or updated guidance from federal or state agencies have not been published; therefore, an update to this species is not warranted. Refer to the BABE and/or the Revised BABE Addendum.

Review: Potential variation to the species habitat/occurrences or the release of additional formal guidance have occurred since the USFWS' concurrences. Species analyzed in the Second Addendum.

Additionally, the BABE presented recommendations to ensure that the Proposed Action would not jeopardize the continued existence of migratory birds and eagles, including the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). Analysis of the effects of the Proposed Action on migratory birds and eagles complied with the provisions of the MBTA and BGEPA. This Second Addendum will also review the occurrences, existing mitigation measures, and additional formal guidance pertaining to the migratory birds and the bald and golden eagles addressed in the BABE. Further, Appendix A, the *FBIR Programmatic BABE Second Addendum On-site Checklist*, serves as an

updated on-site checklist that incorporates the revised conservation measures presented in this Second Addendum in addition to the other conservation measures from the BABE and Revised BABE Addendum that are still applicable.

EFFECTS ANALYSIS

Dakota Skipper

Per the Revised BABE Addendum, the greatest potential stressor to the Dakota skipper (hereafter DASK) is the loss or degradation of its habitat. Therefore, the BIA developed a desktop screening approach in combination with programmatic procedures to ensure that sites in the Project Area with a higher likelihood of DASK occupancy would be avoided, particularly in unbroken native prairie believed to contain the key plant species needed to support the DASK. The BIA developed a series of coarse-to-fine scaled filters (or data layers) within a Geographical Information System (GIS) model to identify and map potential DASK habitat quality on the FBIR landscape, which is known as the Dakota Skipper Habitat Suitability Model [DASK HSM]. In coordination with USFWS, BIA has used the desktop screening approach prior to ROW/easement approvals under the Proposed Action since 2015. For each proposed project, the DASK HSM was used to classify potential habitat, then the habitat type was field verified. The type of survey requirements followed for field verification were dependent upon the habitat suitability type observed in the field.

Through the desktop screening approach, multiple field surveys have been conducted and the associated data collected have provided more accurate DASK habitat (i.e., field-verified high quality prairie habitat; from hereon, Confirmed DASK Habitat) and species' occurrence locations within the Project Area (Crestwood Midstream [Crestwood] 2020; Enerplus 2020, 2021; EOG Resources [EOG] 2020, 2021; Golder Associates [Golder] 2019; KLJ Engineering [KLJ] 2020, 2021; SWCA Environmental Consultants [SWCA] 2019, 2020, 2021; Targa Resources [Targa] 2020; WPX Energy [WPX] 2020). These data have been collected by BIA from third party contractors, and have been used to create a new approach (further discussed below). As a summary, the general areas in which field survey data were collected are shown on Figure 1.

BIA's approach to the revised review is focused on preventing habitat loss and habitat degradation. USFWS (2019) states that loss of native prairie and the degradation of remaining patches of habitat have led to the decline of the DASK and pose continuing threats to the species' continued existence. Further and as noted in the BABE, *Appendix B: Proposed Action and Potential Stressors Matrix*, one of the potential overall stressor categories for the DASK includes habitat degradation and loss (e.g., ground/habitat disturbance, noise, soil compaction, soil erosion and runoff, air emissions, and weed seeds from vehicles, pedestrian, and wind-borne sources). Additionally, as noted in the *Draft Recovery Plan for the DASK* (USFWS 2019), the recovery vision for the DASK is founded on the principles of representation and resiliency and that threats (e.g., habitat loss) will be ameliorated.

Figure 1. Dakota Skipper Field Survey Data and Hotspots

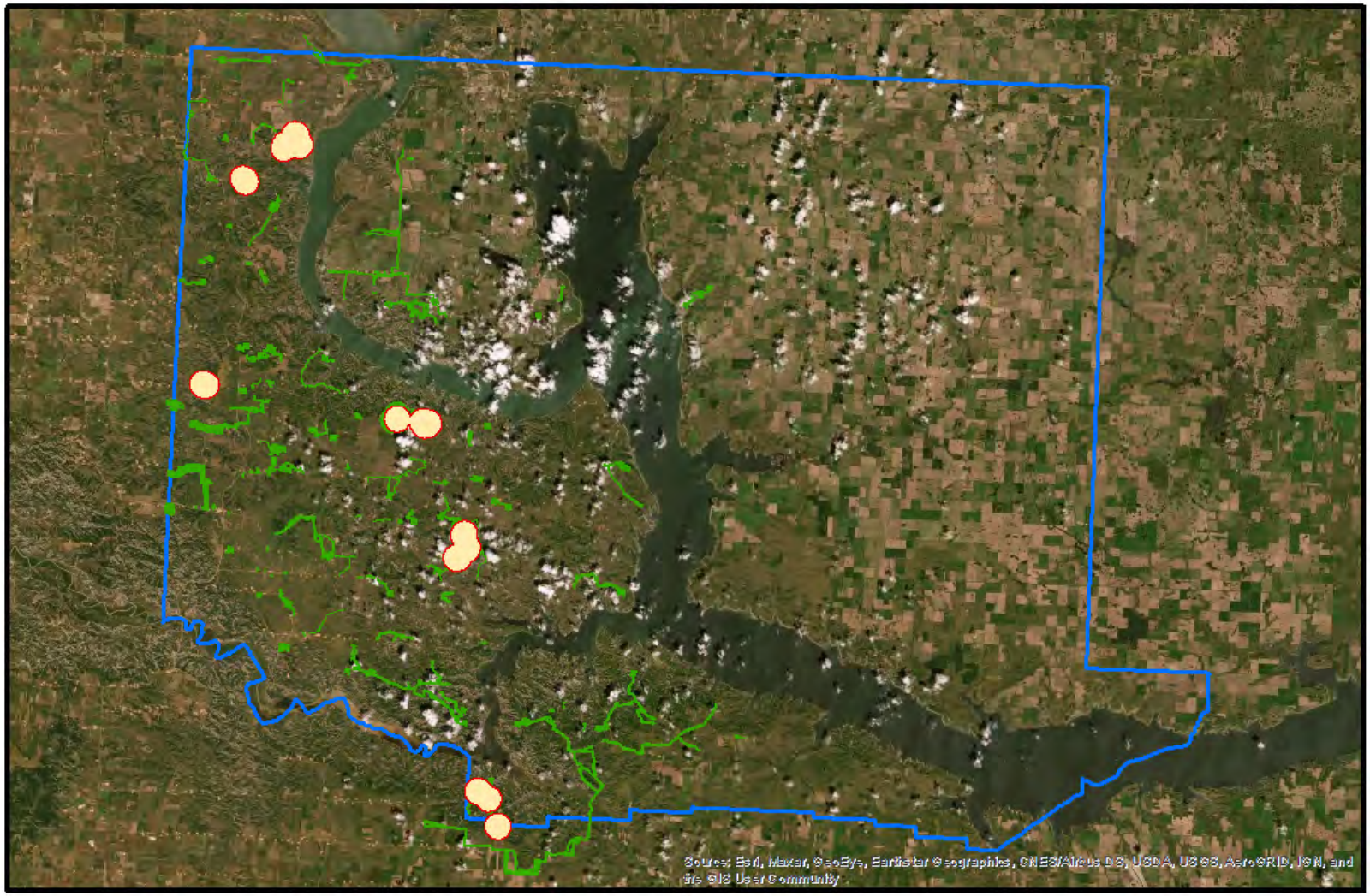


Figure 1. Dakota Skipper Field Survey Data and Hotspots

Fort Berthold Indian Reservation
Programmatic BABE Second Addendum

N

10

Miles

DASK Hotspot
Other DASK Field Survey Data
Fort Berthold Indian Reservation

Data Sources: Crestwood 2020; Enerplus 2020, 2021; EOG 2020, 2021; Golder 2019; KLJ 2020, 2021; SWCA 2019, 2020, 2021; Targa 2020; WPX 2020

Habitat loss could result from direct impacts to potential or occupied DASK habitat under the Proposed Action. For example, vegetation destruction and/or direct removal of habitat resulting from vegetation clearing activities under the Proposed Action, and/or habitat fragmentation resulting from the creation of open, disturbed surfaces (e.g., well pads and access roads) between habitat patches, could occur. In addition, airborne dust from moving vehicles and equipment could settle on adjacent habitat, potentially affecting eggs, larvae, and adults. Airborne dust that settles upon vegetation can interfere with plant growth and fitness; increase pH associated with the dust; increase leaf surface temperatures; alter the edaphic conditions and microclimate (temperature and humidity); and deposit layers of dust upon developing eggs, larvae, and pupae. In addition to having an adverse impact on plant growth and vegetative structure, dust in high concentrations may adversely affect DASK larval development (R. Dana pers. comm. 2015, R. Royer pers. comm. 2015 as cited in USFWS 2017a).

DASK habitat loss and degradation could occur within or adjacent to the proposed access roads and/or well pads depending on the location of the DASK habitat in proximity to the proposed project area. To take a conservative approach, BIA has determined that the potential impact or stressor with the greatest spatial extent of any of the potential impacts or stressors discussed above would be airborne dust resulting from activities occurring under the Proposed Action (particularly from the use of heavy equipment and vehicle traffic during the well pad and access road construction; BABE, Appendix B). Therefore, a review of studies that attempt to quantify the distance of dusting impacts is considered in this analysis. For example, Creuzer et al. (2016) evaluated the effects of increased road dust related to energy development in the Bakken Region on wetlands. These authors observed that significantly higher levels of dust loading were found 10 meters (33 feet) from the road in the study area influenced by energy development (in comparison to an area without energy development). They also found that dust loads decreased dramatically with increasing distance from the road. For example, a 46% decrease in dust can occur when the distance is greater than 40 meters (131 feet) from the road. Another study, Gedafa et al. (2016) (and identified in Gedafa 2016; and Gedafa 2013 [as cited in USFWS 2017a]), documented that road dust on dirt roads can be found up to 480 feet from the road centerline during the summer and fall months.

Another element of the BIA's revised review of impacts to the species was the examination of the list of requisite plant species (as noted in Appendix B, Table 1) based on the results of field quantitative surveys that have been conducted by third party representatives. Multiple detailed quantitative vegetation surveys were reviewed to conduct this analysis[2]. If a plant species was observed to be dominant in at least two field quantitative surveys or observed at more than five field quantitative surveys, the species was further examined and considered for addition to the list of requisite plant species. The plant species were considered: (1) relative to the frequency that they were observed when DASK Habitat was deemed not present or present based on the current desktop screening and field verification approach; and (2) relative to the frequency that the plant species was observed when a DASK occurrence survey was conducted (either positive or negative).

Six plant species were closely reviewed and considered; of the six, two species (i.e., green needlegrass [*Nassella viridula*] and Daisy fleabane [*Erigeron strigosus*]) are proposed to be added to the list of requisite plant species. Green needlegrass was observed and considered dominant in 29% of the field

[2] Specific quantitative vegetation survey datasets with DASK occurrence data were reviewed at 21 locations.

quantitative surveys in which Confirmed DASK Habitat was deemed present based on the existing desktop screening and field verification approach. Daisy fleabane was observed in five of the field quantitative surveys with a cover percentage of 2.5% in one survey and included as a plant species used with great frequency by DASK in North Dakota per McCabe (1981); thus, this species is also proposed to be added to the list of requisite plant species. Nine plant species on the list of requisite plant species were not observed during the field quantitative surveys; however, the species will remain on the list in an effort to be as inclusive as possible of potential DASK habitat.

It should also be noted that Kentucky bluegrass (*Poa pratensis*) was observed 100% of the time in which DASK habitat surveys were conducted[2]. However, in 87% of the field quantitative surveys, Kentucky bluegrass was observed and calculated as dominant when Confirmed DASK Habitat was quantitively surveyed for and deemed not present based on the existing criteria. This is noted because though Kentucky bluegrass was prevalent, dominant, and frequently observed during the surveys, it is likely because it is a successful invasive species and is known to displace native forbs (and native grasses). Further, the presence of Kentucky bluegrass does not indicate it is a suitable species to support DASK. For example, it is cited in USFWS (2018a) that the morphology and growth habit of Kentucky bluegrass (and smooth brome [*Bromus inermis*]) are likely determinants of the vegetation species' unsuitability to support DASK. Also, there is a strong correlation between occurrence of DASK and the dominance of native grasses in the habitat (R. Dana, Minnesota Department of Natural Resources, 2013, pers. comm.; as cited in USFWS 2018a), which would indicate that DASK population persistence requires native grasses for survival. Therefore, if Kentucky bluegrass is observed as a dominant species within the transect during the quantitative field survey, other criteria are met (i.e., five or more requisite plant species are present, two of which must be forbs), and the best judgment of the surveyor is that it could be DASK habitat and DASK could potentially be present, it is recommended that the surveyor contact BIA for further discussion and next steps.

Further, under the BIA's revised review of impacts to the species, areas of known DASK occurrence were reviewed and DASK hotspots were identified. Known confirmed DASK presence locations including locations that overlap with DASK occurrence observations documented in a USFWS DASK observation shapefile were mapped and a 0.62-mile (3,274 feet) buffer placed around those locations. This area (the known confirmed DASK presence locations with the 0.62-mile buffer) will hereon be known as a DASK hotspot (shown in Figure 1). Additionally, multiple proposed well pad and/or access road sites (with a 480-foot buffer around the proposed project areas) were reviewed relative to when DASK occurrences were observed[3]. This review showed that 94% of the time, DASK was only observed when Confirmed DASK Habitat within the 480-foot buffer was greater than 17%. The purpose of this review was to identify "thresholds" in which Confirmed DASK habitat is present with known DASK occurrences. Note, at one study site, the presence of Confirmed DASK habitat was 8% and DASK occurrence was observed; however, the DASK species' occurrence was only observed in one year and not in other years in which it was surveyed for.

[3] Actual operator proposed well pad and/or access road locations with a 480-foot buffer, DASK habitat surveys, and DASK occurrence datasets were reviewed in 16 proposed locations.

Therefore, based upon the revised review of the impacts to the species, and to further prevent possible habitat degradation or disturbance to DASK individuals from implementation of the Proposed Action, the following measures will be incorporated into a revised field verification approach:

- A 480-foot buffer around proposed project area (i.e., the specific area of proposed surface disturbance [including the fenceline around a wellpad]) will be applied
- Use of a revised list of requisite plant species
- Direct impacts to Confirmed DASK Habitat will continue to be avoided
- A 0.62-mile buffer from known DASK occurrence areas will be applied, which will be known as a DASK hotspot
- A threshold for Confirmed DASK Habitat that is located within the proposed project area or within the 480-foot buffer around the proposed project area, will be applied

This revised field verification approach is described below. The approach is also outlined in a checklist that was developed for the oil and gas production companies (hereafter operators) and third-party representatives to use in the field (Appendix A) and in Figure 2.

Revised Field Verification Approach

Step 1. Qualitative Field Survey

A qualitative field survey conducted by a qualified third party representative is required to verify that the proposed project area (i.e., the specific area of separate proposed surface disturbance [including the fenceline around the wellpad or a buffer from the access road]) with a 480-foot buffer is not possibly DASK habitat before project implementation. The qualitative field survey should be conducted following the detailed DASK field habitat survey requirements, which are included in Appendix B. A summary of the steps for performing a qualitative field survey are also included as part of Appendix A. The following data, in addition to photographs that capture the landscape setting as well as the dominant vegetation present at the proposed project area and buffer, should be collected:

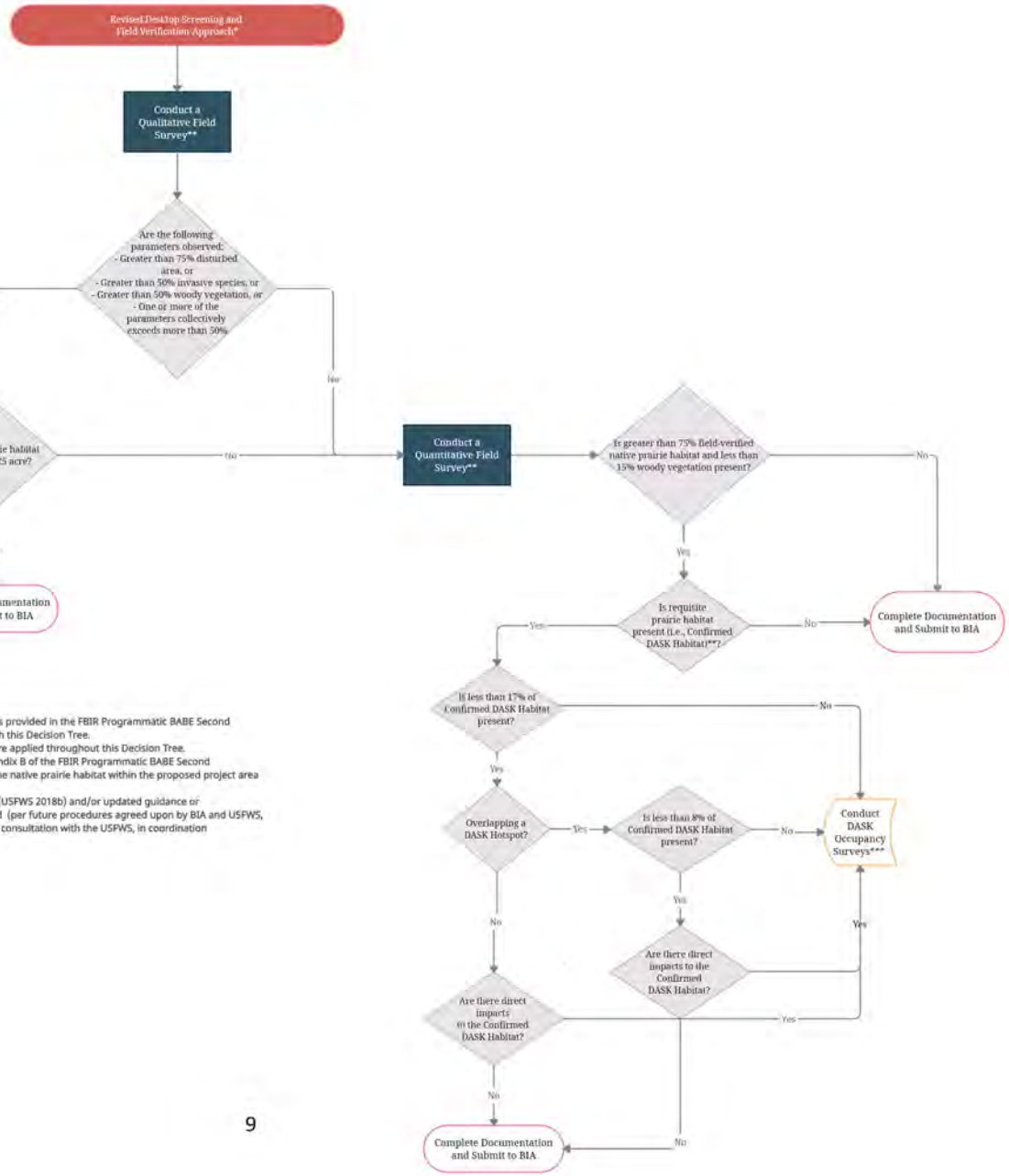
- A list of the dominant plant species
- An ocular estimate of total plant cover within the proposed project area and buffer in a landscape setting
- An ocular estimate of cover by major growth forms (i.e., grass, forb, shrub, and tree)
- An ocular estimate of vertical structure of the vegetation

It should be noted if the following conditions are observed in the proposed project area and buffer:

- Greater than 75% disturbed area, or
- Greater than 50% invasive species, or
- Greater than 50% woody vegetation, or
- One or more of the above parameters collectively exceeds 50%, and
- Native prairie habitat is less than 0.25 acre

Then the third-party representative would submit the completed checklist (see Appendix A) and supporting documentation to BIA (e.g., GIS files, photographs, and accompanying data) and requirements for the DASK are complete. However, if those conditions are not observed (i.e., potential DASK habitat is present and the operator needs to verify), the operator may choose to conduct a quantitative field survey, which is outlined in Step 2 below.

Figure 2. Dakota Skipper Decision Tree



Notes: The details and additional explanations provided in the FBIR Programmatic BABE Second Addendum should be used in conjunction with this Decision Tree.
* = The proposed project area and buffer are applied throughout this Decision Tree.
** = Additional Details are Provided in Appendix B of the FBIR Programmatic BABE Second Addendum. The surveys should encompass the native prairie habitat within the proposed project area and buffer.
*** = Per the 2018 DASK ND Survey Protocol (USFWS 2018b) and/or updated guidance or compensatory mitigation would be conducted (per future procedures agreed upon by BIA and USFWS, as information becomes available), or further consultation with the USFWS, in coordination with BIA, is necessary).

Figure 2. Dakota Skipper Decision Tree

Step 2. Quantitative Field Survey

A quantitative field survey by a qualified third-party representative is required to verify that the proposed project area (i.e., the specific area of proposed surface disturbance) and buffer are not possible DASK habitat before project implementation. The quantitative field survey should be conducted following the detailed DASK field habitat survey requirements, which are included in Appendix B. A summary of the steps for the approach are provided in Appendix A. The following parameters must be observed to quantify the proposed project area and buffer as Confirmed DASK Habitat:

Confirmed DASK Habitat Parameters:

- Greater than 75% field-verified native prairie habitat and less than 15% woody vegetation;
- Requisite prairie habitat is present (the plant species that make up requisite prairie habitat are shown in Appendix B, Table 1; to accommodate both presence and abundance requirements, the following plant community characteristics must be present for an area to be considered Confirmed DASK Habitat):
    - Five or more requisite plant species, two of which must be forbs
    - The community must be dominated by requisite plant species (as determined by dominance calculations identified in Appendix B)

If the third party representative observes all of these parameters, then Confirmed DASK Habitat would be considered present within the proposed project area and buffer, and the proposed project area would not be disturbed unless: (1) less than 17% of Confirmed DASK Habitat is present within the proposed project area and buffer, the project area and buffer does not overlap a DASK Hotspot, and no direct impacts to the Confirmed DASK Habitat would occur; (2) less than 8% of Confirmed DASK Habitat is present within the proposed project area and buffer, the project area overlaps a DASK Hotspot, and no direct impacts to the Confirmed DASK Habitat would occur; or (3) DASK occupancy surveys result in no DASK observations, per the 2018 *Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol* (USFWS 2018b; from hereon, 2018 DASK ND Survey Protocol and/or updated guidance).

If the third party representative does not observe all of the Confirmed DASK Habitat parameters, then no Confirmed DASK Habitat is present, per the quantitative survey, and the third party representative would then submit the completed checklist and supporting documentation to BIA (e.g., GIS files, photographs, and accompanying data) and quantitative field survey requirements for the DASK are complete.

Conservation Measures

The measures in accordance with the BIA's revised field verification approach described above, including Appendices B and C from the 2018 DASK ND Survey Protocol, would be followed by the operators when completing activities pursuant to the Proposed Action.

Northern Long-eared Bat

Per the BABE, the northern long-eared bat (NLEB) is one of the species of bats most impacted by the disease, white-nose syndrome (WNS). Though no other threat to the NLEB is as severe as WNS, other sources of mortality, though not observed to cause significant population declines, include impacts to hibernacula and loss or degradation of the species' summer habitat. If the NLEB is present on the FBIR, though it has never been observed, stressors from the Proposed Action could impact its habitat. Further, per the Revised BABE Addendum, although no impacts to the NLEB were expected, the key to the interim NLEB 4(d) rule was used at the time to further support the analysis in the determination that no

purposeful take of an individual would occur, and mitigation measures were developed for adherences to the interim NLEB 4(d) rule. Subsequently, USFWS developed a final NLEB 4(d) rule, which was published in the Federal Register [FR] in January 2016 (81 FR 1900) that specifically defines "take" prohibitions. For the final NLEB 4(d) rule, the USFWS provided a framework to streamline section 7 consultations when federal actions may affect the NLEB but not cause prohibited take (USFWS 2016b). This framework relies on the finding of a programmatic biological opinion (USFWS 2016b; USFWS 2016c; USFWS 2016d) that the USFWS prepared for the final NLEB 4(d) rule. This framework is incorporated into this Second Addendum. The resulting determination under the final NLEB 4(d) rule was that limited amounts of incidental take, if they were to occur, would be allowed.

BIA will fulfill their project-specific section 7 responsibilities by using the final NLEB 4(d) rule framework which is incorporated in this Second Addendum. The current geographical distribution of the NLEB has not changed from its historical distribution. As of 2017, all of the counties within the Project Area are documented as being within the NLEB range (USFWS 2017b). However, USFWS has been monitoring the species and location information of hibernacula and maternity roost trees, and per USFWS (2021b), no known NLEB hibernacula or maternity roosts are known to occur in North Dakota. Additionally, per USFWS (2019b), the Project Area is located in the WNS Zone.

Table 2 (adapted and modified from the *Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form*) provides the information needed to determine NLEB 4(d) rule framework compliance for the analysis, as described below. Note, incidental takes are not expected, as described above, since no NLEB hibernacula and maternity roosts are known to occur in North Dakota.

In response to Question 1, at this time, the Project Area is located inside the WNS Zone (USFWS 2019b). Questions 2-6 in Table 2 would be further evaluated on a site-specific basis during the onsite survey. However, it is important to note that no known NLEB hibernacula or maternity roosts are known to occur in North Dakota.

Table 2. NLEB 4(d) Rule Framework Compliance

	Yes	No
1. Does the project occur wholly outside of the WNS Zone?	☐	☐
2. Have you contacted the appropriate agency to determine if your project is near known hibernacula or maternity roost trees?[1]	☐	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum? [2]	☐	☐
4. Could the project alter the entrance or interior environment of a known hibernaculum? [2]	☐	☐
5. Does the project remove any trees within 0.25 mile of a known hibernaculum at any time of year? [2]	☐	☐
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.[2]	☐	☐

[1]To date, per USFWS (2021b), no known NLEB hibernacula or maternity roosts are known to occur in North Dakota.

[2]This would be determined during the specific onsite survey. If the project proponent cannot answer no to this, then further consultation and/or surveys would be conducted. Note that at this time, no known NLEB hibernacula or maternity roosts are known to occur in North Dakota; however, this question is included for conservative purposes in case potential hibernaculum is found in the Project Area in the future.

Although no known NLEB hibernacula or maternity roosts are known to occur in North Dakota, since this is a programmatic assessment and for additional protection of the NLEB, the BIA requires additional

assurances that trees with greater than a 2-inch diameter at breast height (DBH) are not maternity roost sites. Therefore, BIA would not allow trees with greater than 2-inch DBH to be cut between June 1 and July 31; if this cannot be avoided, then a survey to determine occupancy of possible suitable maternity roost habitat (i.e., trees greater than 2-inch DBH) would be required.

Appendix A provides a checklist that includes the required conservation measures for the NLEB in the Project Area. These measures are also included below.

Conservation Measures

In accordance with the final NLEB 4(d) rule and BIA's requirements, the following measures would be followed by the operators when completing activities pursuant to the Proposed Action:

- Disturbance to potential suitable roost trees would be minimized, as required by BIA.
- The proposed project would not involve removing a NLEB known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31.
- The proposed project would not involve removing any trees within 0.25 mile of a NLEB hibernaculum at any time of the year.
- Trees with greater than 2-inch DBH would not be cut between June 1 and July 31. If trees with greater than 2-inch DBH must be cut between June 1 and July 31, then a survey to determine occupancy of possible suitable maternity roost trees would be conducted.

Eagles

As identified in the BABE, the primary stressors to bald and golden eagles from the Proposed Action include disturbance to the species and potential nest abandonment. Therefore, in accordance with the mitigation measures identified in the BABE, in order to mitigate against potential disturbance to bald and golden eagles or nest abandonment, the operators have maintained a 0.5 mile (2,640 feet) buffer from any bald or golden eagle nest locations, and some proposed project locations have been shifted to avoid eagle nests. Additionally, if any eagle nests were found after work began, all activity would have ceased, the Three Affiliated Tribes (TAT) Fish and Wildlife Division would have been notified, and USFWS would have been contacted for advice on how to proceed. Additionally, the operators conducted a 3-year annual survey of eagle nests within the Project Area, and site specific (0.5 mile line-of-sight) surveys for bald and golden eagles were conducted as part of the onsite meeting for individual project locations. Figure 3 shows the known eagle nests in the Project Area. The locations were mapped using field data collected by the BIA from third party contractors and operators (Carlson McCain 2016; SWCA 2019).

Upon further evaluation and to reduce the likelihood of eagles being influenced by oil and gas development, and as noted in the BABE, BIA recommends that the *National Bald Eagle Management Guidelines* (USFWS 2007), which are the most appropriate measures at this time, be followed from hereon for any activities pursuant to the Proposed Action. Per USFWS (2007) guidelines, a buffer of 660 feet should be applied when the activity would/would not be visible from the nest, and landscape buffers are recommended for oil and natural gas drilling and refining and associated activities.

Figure 3. Eagle Nests

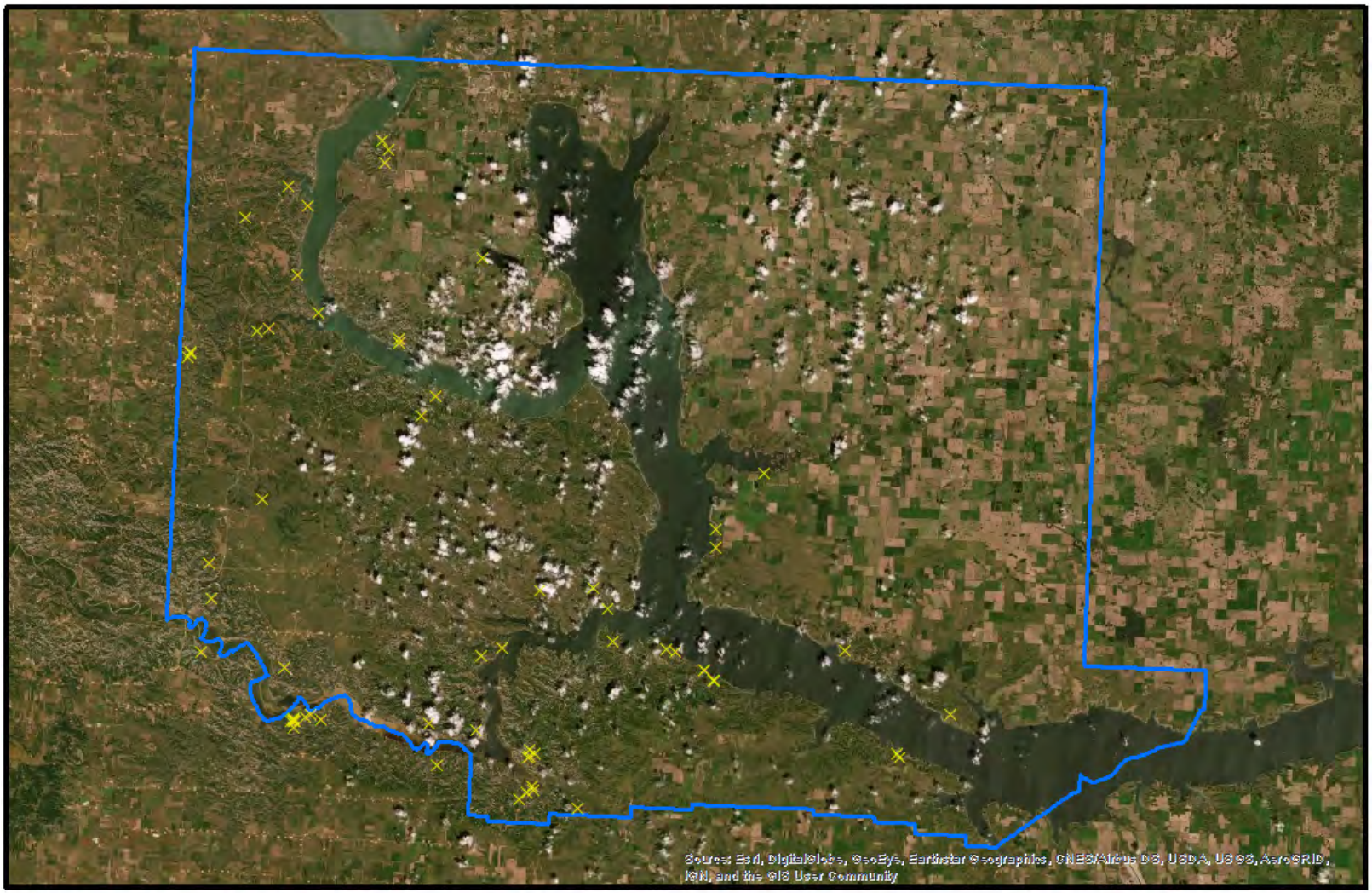


Figure 3. Eagle Nests

Fort Berthold Indian Reservation
Programmatic BABE Second Addendum

10
Miles

Eagle Nests
(Carlson McCain 2016; SWCA 2019)

Fort Berthold Indian Reservation

Conservation Measures

In accordance with the USFWS (2007), the following measures would be followed by the operators when completing activities pursuant to the Proposed Action:

- Sites of historical bald and golden eagle nests would be reviewed (see Figure 3), and onsite survey completed.
- A buffer of 660 feet would be required when the activity would/would not be visible from the nest, and landscape buffers are recommended for oil and natural gas drilling and refining and associated activities.

If any eagle nests are found (inside of a buffer of 660 feet from any bald or golden eagle nest locations) after work begins, all activity would cease and USFWS would be contacted for advice on how to proceed and the TAT Fish and Wildlife Division would be notified.

Migratory Birds

As identified in the BABE, the Proposed Action would affect migratory bird habitat either directly or indirectly. Therefore, in accordance with the mitigation measures identified in the BABE, measures that have been implemented to prevent disturbance to migratory birds or nest abandonment include the following:

- If construction occurred between February 1 to July 15, which is considered the breeding season for migratory birds, one of the two conservation measures identified below would have been utilized:
    - (1) minimization – in order to minimize availability of nesting habitat for ground nesting species the operator would mow or grub areas identified as possible suitable migratory bird nesting habitat within the approved ROW prior to February 1, subsequently the approved ROW would be maintained in a degraded state until ground clearing has commenced within the approved ROW; or
    - (2) site-specific survey – if the operator cannot degrade possible suitable migratory bird nesting habitat within the approved ROW prior to February 1 then a site-specific survey would be conducted no greater than five days prior to the planned commencement of ground clearing activities, including mowing and grubbing, to determine if active nests are present. If active nests are found, the USFWS and BIA would be contacted to determine how to proceed, and the TAT Fish and Wildlife Division would be notified.

However, recent guidance has indicated other directives. Per USFWS Memorandum FWS/DMBM/AMB/068029 (hereafter USFWS Memorandum; USFWS 2018c), an active nest is one *that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain nonviable eggs, or are being built but do not yet have an egg in them are considered inactive*. Conversely, an inactive nest is *one that is empty, contains non-viable eggs, or is being built but does not yet have an egg in the nest*. The USFWS Memorandum (USFWS 2018c and USFWS 2018d) also further reiterates that a permit or other regulatory authorization is not required under the MBTA to destroy an inactive migratory bird nest (as defined above), provided no possession occurs during or after the destruction. However, the USFWS Memorandum further notes that inactive nests may be protected by federal statutes other than

the MBTA (e.g., ESA, BGEPA, state, tribal, and local laws), and that due to the biological and behavioral characteristics of some migratory bird species, destruction of their nests entails an elevated risk of unknowingly killing them. For example, it is difficult to detect whether or not the nest of a cavity-nesting species is active; therefore, before destroying this type of nest, the USFWS recommends consulting with an expert (e.g., U.S. Department of Agriculture – Wildlife Services, wildlife professionals, environmental consultants, or rehabilitation experts) who can help determine nest activity.

Therefore, the existing conservation measures to protect migratory birds outlined in the BABE will be revised with the addition of the definition of an active nest, per the USFWS Memorandum (USFWS 2018c). Additionally, a measure has been approved by USFWS and BIA (that also adhere to the BABE) that would be implemented if an active nest is found within an approved ROW; this measure is incorporated into the revised conservation measures. The revised conservation measures for migratory birds are outlined in the section below.

Conservation Measures

In accordance with the USFWS (2018c), the following measures would be followed by the operators when completing activities pursuant to the Proposed Action:

- If construction occurs from February 1 to July 15, which is considered the breeding season for migratory birds, one of the two conservation measures identified below would be utilized:
  - (1) minimization – in order to minimize availability of nesting habitat for ground nesting species the operator would mow or grub areas identified as possible suitable migratory bird nesting habitat within the approved ROW prior to February 1, subsequently the approved ROW would be maintained in a degraded state until ground clearing has commenced within the approved ROW; or
  - (2) site-specific survey – if the operator cannot degrade possible suitable migratory bird nesting habitat within the approved ROW prior to February 1 then a site-specific survey would be conducted no greater than five days prior to the planned commencement of ground clearing activities, including mowing and grubbing, to determine if active nests are present.
- If an active nest[4] (i.e., nest that contains viable eggs and/or chicks) is found within an approved ROW, then a 50-foot buffer with an established physical barrier would be adhered to.

CONCLUSION AND DETERMINATION OF EFFECTS

Oil and gas development has continued on the FBIR and in surrounding areas over the past decade and is expected to continue into the future. This ongoing development would potentially remove, alter, or degrade habitat for the DASK and the NLEB.

The presence of these species in the Project Area were discussed, along with conservation measures that would be implemented under the Proposed Action. The following section evaluates the potential of the Proposed Action to result in adverse effects to the DASK and NLEB, which were previously discussed

[4] A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest; nests that are empty, contain nonviable eggs, or are being built but do not yet have an egg in them are considered inactive.

in the BABE and BABE Revised Addendum. An effects determination statement of no effect; may affect, but not likely to adversely affect; or may affect, likely to adversely affect is provided for each species.

Dakota Skipper

Based on the analysis of the Proposed Action, the current status of the DASK on the FBIR, and incorporation of conservation measures to address stressors listed in this Second Addendum, it is determined that implementation of the Proposed Action may affect, but not likely to adversely affect the DASK.

Northern Long-eared Bat

Based on the analysis of the Proposed Action, the current status of the NLEB on the FBIR, and incorporation of conservation measures to address stressors listed in this Second Addendum, it is determined that implementation of the Proposed Action would have no effect on the NLEB.

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Acronyms

% – percent

2018 DASK ND Survey Protocol - 2018 Dakota Skipper (*Hesperia dacotae*) North Dakota Survey Protocol

BABE – *A Programmatic Biological Assessment Biological Evaluation for Fort Berthold Indian Reservation Oil and Gas Development, 2014*

BGEPA – Bald and Golden Eagle Protection Act of 1940

BIA – Bureau of Indian Affairs

Confirmed DASK Habitat – field-verified high quality prairie habitat

Crestwood – Crestwood Midstream

DASK – Dakota Skipper

DASK HSM – Dakota Skipper Habitat Suitability Model

DBH – diameter at breast height

EOG – EOG Resources

ESA – Endangered Species Act of 1973

FBIR – Fort Berthold Indian Reservation

FBIR PEA – *Mitigated Programmatic Environmental Assessment for Oil and Gas Development on the Fort Berthold Indian Reservation Project, 2017*

FR – Federal Register

GIS – geographical information system

Golder – Golder Associates

KLJ – KLJ Engineering

MBTA – Migratory Bird Treaty Act of 1918

MHA – Mandan, Hidatsa and Arikara

NLEB – northern long-eared bat

Operators – oil and gas production companies

Revised BABE Addendum – *Revised Biological Assessment Biological Evaluation Addendum, 2015*

ROW – right-of-way

Second Addendum – *Fort Berthold Indian Reservation Programmatic BABE Second Addendum*

SWCA – SWCA Environmental Consultants

Targa – Targa Resources

TAT – Three Affiliated Tribes

U.S. – United States

USFWS – United States Fish and Wildlife Service

USFWS Memorandum – USFWS Memorandum FWS/DMBM/AMB/068029

WNS – white-nose syndrome

WPX – WPX Energy

Appendix A

FBIR Programmatic BABE Second Addendum
On-site Checklist

FBIR Programmatic BABE Second Addendum On-site Checklist

Date:	Preparer (Consultant): Contact Info:

Project Name:

County:

Section/Township/Range:

Project Proponent/Client:

Contact Info:

Botanical and Biological Resources

Dominant Plant Species: (Insert here and/or use table below on pg 3)

Noxious/Invasive Plant Species:

Wildlife Observed:

Distance and Direction to Nearest Drainage:

Topsoil Depth:

Photo Log

Attach photographs to capture the landscape setting & dominant vegetation present at the proposed project area and buffer

Photo #	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
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14	
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19	
20	

Critical Field Element	Circle	Discuss Minimization/Avoidance Measures/Survey Required/Additional Information
Northern Long-eared Bat 1. Is there forested habitat, roost sites, or hibernacula present? If yes, answer the questions below. a. Could the project alter the entrance or interior environment of a known hibernaculum? b. Could the project disturb hibernating NLEBs in a known hibernaculum? c. Would the project remove any trees within 0.25 miles of a known hibernaculum at any time of year? d. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150' radius from the maternity roost tree from June 1 through July 31 2. Would the proposed project cut trees with greater than 2" DBH between June 1 and July 31?	Y / N Y / N Y / N Y / N Y / N Y / N	If yes to #1a-1d, consultation with BIA and/or survey(s) are required. Provide results. If yes to #2, then a survey to determine occupancy of possibly suitable maternity roost trees and/or consultation with BIA are required. Provide results.
Piping Plover 3. Would construction activities take place within 0.5 mile of piping plover designated critical habitat?	Y / N	If yes, is there a topographic barrier within 1,000'? If no, survey required. Provide results.
Eagles 4. Historical bald and golden eagle nests reviewed and onsite survey completed? 5. Any nests documented within 660'?	Y / N Y / N	If yes to #5, provide results and requirements.
Migratory Birds 6. Would construction occur from February 1 to July 15? *Note: an active nest is one that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain nonviable eggs, or are being built but do not yet have an egg in them are considered inactive.*	Y / N	*Circle Which of These Apply* • Minimization of nesting habitat prior to February 1 • Site-specific survey o If active nest is found, a 50' buffer with an established physical barrier would be adhered to
7. Well pads designed to minimize disturbance and impacts to drainages?	Y / N	If yes, describe how:
8. Drilling/production activities at least 150' from wetlands, perennial and intermittent streams?* *Excluding pipeline, transportation, and utility corridors	Y / N	If no, discuss:
9. Drilling/production activities at least 1,000' from Lake Sakakawea high water mark (1,854')?	Y / N	If no, discuss:
10. Well pad design with 24" berm?	Y / N	If no, discuss:

Habitat Observed (Circle if Present)

Emergent Wetlands Small Grain Crops Prairie Dog Town Undisturbed Upland Prairie

Abundant Wildflowers Mixed Grass Prairie Actively Grazed Rangeland

Dominant Species Observed		

Dakota Skipper
Step 1. Qualitative Field Survey – see detailed requirements in Appendix B of the Programmatic BABE Second Addendum
a. List the dominant plant species (can use the table on pg 3 above or attach list) within the proposed project area and buffer:
b. Provide an ocular estimate (%) of total plant cover within the proposed project area and buffer in a landscape setting:

c. Provide an ocular estimate of cover by major growth forms Grass: % Shrub: % Forbs: % Trees: %		
d. Provide an ocular estimate of vertical structure of the vegetation: Grass: Shrub: Forbs: Trees:		
e. Results of the qualitative field survey for the proposed project area and buffer (Circle all that apply) →	1. There is >75% disturbed area	Describe the type of disturbed area present and estimate percentage:
	2. There is >50% invasive species present	Describe the type (growth form and species, if possible) of invasive species present and estimate percentage:
	3. There is >50% woody vegetation present	Describe the type (growth form and species, if possible) of woody vegetation present and estimate percentage:
	4. One or more of the above parameters collectively exceeds 50%	Describe which parameters collectively exceed 50%:
	5. Native prairie habitat is <0.25 acre (native grasses and forbs are dominant in the plant community)	Describe the native prairie habitat:
f. If any of the first 4 conditions listed under Question e are circled and Question 5 is circled, submit this completed checklist and supporting documentation (e.g., GIS files, photographs, and accompanying data) to BIA →	**DASK Documentation is Complete**	
g. If none of the conditions listed under Question e are circled or Question 5 is not circled, a Quantitative Field Survey is required. →	Go to Step 2	

Step 2. Quantitative Field Survey – see detailed requirements in Appendix B of the Programmatic BABE Second Addendum

a. When was the survey conducted? *Note, the recommended survey window is May 1 – October 15; although June is the ideal time for accurately identifying forb species. Prior BIA approval is needed if surveys are conducted outside of the survey window.*	b. If the survey was conducted outside of the recommended survey window, was there snow cover? (Circle one) **Yes** **No**	c. What survey methodology was used to conduct the survey? (Circle one) **Point-intercept method** **Daubenmire method**

d. Results (Provide % cover of each species [provide dominant species with percentage; can use the table on pg 3 above or attach list]):

Provide % cover by invasive species:

Provide % cover by woody vegetation:

Provide % cover by native prairie species:

e. Based on species' dominance calculations for the native prairie habitat in the proposed project area and buffer (circle all that apply):

- Requisite species are dominant (from Table 1 of Appendix B in the Programmatic BABE Second Addendum)
- Five requisite species are present (including a minimum of 2 forb species)
- Total plant cover consists of >75% native prairie species and <15% woody vegetation

f. If fewer than 3 of the statements under Question e above are circled →	**DASK Documentation is Complete.** Submit this completed checklist and supporting documentation (e.g., GIS files, photographs, and accompanying data) to BIA.
g. If all 3 statements are circled under Question e, then Confirmed DASK Habitat would be considered present within the proposed project area and buffer. And if less than 17% Confirmed DASK Habitat is present, the proposed project area and buffer are not overlapping a DASK Hotspot, and no direct impacts to the Confirmed DASK Habitat would occur	**DASK Documentation is Complete.** Submit this completed checklist and supporting documentation to BIA. If greater than 17% Confirmed DASK Habitat is present within the proposed project area and buffer, direct disturbance to Confirmed DASK Habitat is being pursued or the proposed project area and buffer are overlapping a DASK Hotspot, then **DASK occupancy surveys**, per the 2018 DASK ND Survey Protocol and/or updated guidance, would be required to be conducted by a qualified 3rd party representative, compensatory mitigation would be conducted (per future procedures agreed upon by BIA and USFWS, as information becomes available), or further consultation with the USFWS, in coordination with BIA, is necessary.
h. If all 3 statements are circled under Question e, then Confirmed DASK Habitat would be considered present within the proposed project area and buffer. And if less than 8% of Confirmed DASK Habitat is present within the proposed project area and buffer, the proposed project area and buffer overlap a DASK Hotspot, and no direct impacts to the Confirmed DASK Habitat would occur	**DASK Documentation is complete** and submit this completed checklist and supporting documentation to BIA. If greater than 8% Confirmed DASK Habitat is present within the proposed project area and buffer, direct disturbance to Confirmed DASK Habitat is being pursued or the proposed project area and buffer are overlapping a DASK Hotspot, then **DASK occupancy surveys**, per the 2018 DASK ND Survey Protocol and/or updated guidance, would be required to be conducted by a qualified 3rd party representative, compensatory mitigation would be conducted (per future procedures agreed upon by BIA and USFWS, as information becomes available), or further consultation with the USFWS, in coordination with BIA, is necessary.

References

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Acronyms/Symbols Used in the On-site Checklist:

- number
% - percent
‘ – feet
“ – inches
< - less than
> - greater than
pg – page
Y/N – yes/no
USFWS – United States Fish and Wildlife Service
BIA – Bureau of Indian Affairs
DBH – diameter at breast height
Info – information
NLEB – Northern Long-eared Bat
DASK – Dakota skipper
proposed project area - the specific area of proposed surface disturbance including fenceline
buffer - 480‘ buffer

Additional Notes:

Appendix B

Detailed Dakota Skipper Field Habitat Survey Requirements

Ecological Site Survey Qualitative Requirements

A qualified third-party representative will conduct a qualitative ecological survey of the proposed project area (i.e., the specific area of proposed surface disturbance [including the fenceline around a wellpad]) during or before the onsite meeting, along with appropriate analysis and reporting. The representative is considered qualified if the individual is trained in biological sciences and/or has equivalent field experience.[1]

Qualitative surveys are intended to be ocular estimates that verify results from the desktop screening approach or, alternatively, reveal the need for follow-up quantitative surveys. They also provide basic ecological information about the area. Data to be collected during the qualitative surveys include the following:

- List of dominant plant species
- Estimates of total plant cover at the proposed project area, along with an estimate of cover by major growth forms (grass, forb, shrub, and tree)
- Estimate of vertical structure of the vegetation
- Photographs that capture the landscape setting as well as dominant vegetation components

Quantitative Vegetation Survey Requirements

A qualified third-party representative will conduct a quantitative vegetation survey of the native prairie habitat observed within the proposed project area and buffer[1], along with appropriate analysis and reporting. The representative is considered qualified if the individual: 1) is trained in biological sciences and/or has equivalent field experience, and 2) has significant experience in plant identification and survey methodologies in this ecosystem.

The purpose of quantitative vegetation surveys is to determine if field-verified high-quality habitat as it relates to the life history and associated vegetation requirements for the Dakota skipper is present[1]. As such, data collection is focused on identifying both the presence and abundance of requisite plant species, woody species, and invasive species. To prevent the need for follow-up vegetation surveys, the recommended survey window is May 1 through October 15, with the month of June as the ideal time for accurately identifying forb species.[2]

A qualified third-party representative will conduct a quantitative vegetation survey using point intercept or Daubenmire methodologies. The area to be characterized in the evaluation should consist of the native prairie habitat within the proposed project area and buffer. Cover should be identified using the following categories: plant (record species), litter, bareground, and rock.

Point-intercept method: Data should be collected along a minimum of four randomly located 50-meter (m) transects within each ecological site, and measurements should be taken at 1-m increments. A minimum of 200 points per cover type should be sampled to increase the likelihood that sparsely distributed forbs are detected during the surveys (Elzinga et al. 1998). More transects may be needed based on vegetation heterogeneity. Percent cover is determined by the number of "hits" along transects. Final vegetation estimates for native species cover, woody plant cover, invasive species cover, and requisite plant species cover must include a 90% confidence interval computed around the mean values estimated from the vegetation surveys.

Daubenmire method: Data should be collected from within a minimum of 10 randomly located 0.25-m Daubenmire frames. Aerial cover should be estimated so that total cover sums to 100% within each frame; however, plants must be rooted within the frame to be counted towards total cover. More Daubenmire frames may be needed based on vegetation heterogeneity. Final vegetation estimates for native species cover, woody

[1] The field surveys will need to be resurveyed after 5 years of the initial survey if disturbance has not occurred.

[2] Initial surveys may be conducted outside of the recommended survey window, but they should be limited to periods during which snow cover is absent. The results of initial surveys should be considered preliminary, however, and they may be used to determine areas within the study area that are absent of habitat. Prior Bureau of Indian Affairs (BIA) approval is needed if surveys are conducted outside of the survey window.

plant cover, invasive species cover, and requisite plant species cover must include a 90% confidence interval computed around the mean values estimated from the vegetation surveys.

Auxiliary data collection: After the line transect or Daubenmire frame has been laid out, but before collecting the data, a photograph of the transect/frame should be taken with transect/frame identification information and the date clearly visible. Global Positioning System (GPS) coordinates of the transect/frame should also be recorded so that the location can be re-visited if needed.

The vegetation cover of the proposed project area and buffer should also be documented with high quality digital photos. Photos will be taken in the four cardinal directions from the center stake, providing a clear depiction of vegetation on the proposed location.

The slope of the proposed project area and buffer should also be documented using a clinometer. If the slope varies within the proposed project area and buffer, several measurements should be taken to document this. Aspect of the slope should also be documented.

Data Analysis and Determining Dominance

Data collected along transects will be aggregated for the proposed project area so that mean values can be assigned to the following categories:

- Percent cover by invasive species
- Percent cover by woody vegetation
- Percent cover by native prairie species[3]
- Percent cover by Dakota skipper requisite species
- Percent cover of each species

Dominance will be determined by assessing mean cover of requisite plant species versus other species identified during quantitative vegetation surveys. Requisite plant species dominance occurs under the following conditions:

- Mean cover by a single requisite species exceeds 50%
- More than 50% of the dominant species, as determined by individual species cover, are requisite plant species (requisite plant species are identified in from Table 1). The 50/20 rule should be used to identify dominant species. Steps in selecting dominant species are as follows:
    - Rank all species from most to least abundant according to absolute cover percentages.
    - Select plant species from the ranked list, in decreasing order of coverage until the cumulative coverage of selected species exceeds 50% of total coverage. If two are more species are equal in coverage, they should be selected. The selected plant species are considered to be dominants.
    - In addition, select any other species that, by itself, is at least 20% cover.
    - Generate a count for dominant requisite species and dominant other species.
    - If the percent dominant requisite species exceeds 50% (as calculated by dominant requisite species divided by dominant other species x 100%), than dominance by requisite species has been achieved.
    - If Kentucky bluegrass (*Poa pratensis*) is observed as a dominant species in the field, and the best judgment of the surveyor is that it could be Dakota Skipper (DASK) habitat and DASK occurrence could potentially be present, it is recommended that the surveyor contact BIA for further discussion and next steps.

[3] Classifications for plant species to indicate native prairie habitat are determined by the U.S. Department of Agricultural PLANTS database (United Stated Department of Agriculture [USDA] and Natural Resource Conservation Service [NRCS] 2021). The North Dakota Department of Agriculture (ND DOA) Noxious Weeds list (ND DOA 2017) will be secondarily reviewed for classifying plant species as native prairie species versus noxious weeds.

Table 1. Requisite Plant Species

Key Plant Species	Common Name	Forb or Grass
Amorpha canescens	Leadplant	Forb
Andropogon gerardii	Big bluestem	Grass
Artemisia frigida	Prairie sagewort	Forb
Astragalus crassicarpus	Groundplum milkvetch	Forb
Bouteloua curtipendula	Sideoats grama	Grass
Calylophus serrulatus	Yellow sundrops	Forb
Campanula rotundifolia	Bluebell bellflower	Forb
Dalea candida	White prairie clover	Forb
Dalea purpurea	Purple prairie clover	Forb
Echinacea angustifolia	Purple coneflower	Forb
Erigeron strigosus	Daisy fleabane	Forb
Gaillardia aristata	Common gaillardia/blanketflower	Forb
Geum triflorum	Old man's whiskers/prairie smoke	Forb
Hesperostipa comata	Needle-and-thread grass	Grass
Hesperostipa spartea	Porcupine grasses	Grass
Liatris aspera	Tall blazing star	Forb
Liatris punctata	Dotted blazing star	Forb
Lilium philadelphicum	Prairie Lily/Wood Lily	Forb
Nassella viridula	Green needlegrass	Grass
Packera plattensis	Prairie groundsel	Forb
Pascopyrum smithii	Western wheatgrass	Grass
Pulsatilla patens	Eastern pasqueflower	Forb
Ratibida columnifera	Upright prairie coneflower	Forb
Rudbeckia hirta	Black-eyed susan	Forb
Schizachyrium scoparium	Little bluestem	Grass
Sorghastrum nutans	Indiangrass	Grass
Sporobolus heterolepis	Prairie dropseed	Grass
Symphyotrichum sericeum	Western silver aster	Forb
Zizia aptera	Meadow zizia/heartleaf golden alexanders	Forb

Source: United States Fish and Wildlife Service (USFWS) 2015; Royer et al. 2014

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