

4.8 THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONSERVATION CONCERN

4.8.1 Introduction

This section addresses impacts to the following:

- Federal endangered, threatened, proposed, or candidate species, in addition to species under consideration (Section 4.8.3.1);
- State endangered or threatened species (Section 4.8.3.3);
- Federally designated critical habitat;
- Bureau of Land Management (BLM) sensitive species (Section 4.8.3.2); and
- Species of conservation concern (Section 4.8.3.4).

Assessments for species of conservation concern include those species that have been specifically identified in Montana, North Dakota, South Dakota, Nebraska, and Kansas as sensitive or species of conservation concern.

4.8.2 Impact Assessment and Methodology

The impacts of the proposed Project on federal or state-listed endangered, threatened, proposed, or candidate species, BLM sensitive species, and species of conservation concern have been evaluated using a qualitative evaluation of the potential direct and indirect impacts to species and their habitats resulting from the Project's construction and operation activities. In addition to information provided by TransCanada Keystone Pipeline, LP (Keystone), information was provided by the USFWS, BLM, Montana Fish, Wildlife, and Parks (MFWP), South Dakota Game, Fish and Parks (SDGFP), North Dakota Game and Fish Department (NDGFD), Nebraska Game and Fish Commission (NGFC), and Kansas Department of Wildlife, Parks and Tourism (KDWPT).

4.8.3 Potential Impacts

Types of potential impacts to threatened and endangered species and species of conservation concern are similar to those described for vegetation in Section 4.5 and wildlife in Section 4.6. The following describes ways in which the proposed Project could impact species:

- Habitat loss, alteration, and fragmentation;
- Direct mortality during construction and operation;
- Indirect mortality because of stress or avoidance of feeding due to exposure to construction and operations noise, and from increased human activity;
- Reduced breeding success from exposure to construction and operations noise, and/or from increased human activity;
- Reduced survival or reproduction due to decreased abundance of food species or reduced cover;

- Loss of individuals and habitats due to exposure to toxic materials or crude oil releases (addressed in Section 4.13, Potential Releases); and
- Direct mortality due to collision with or electrocution by power lines associated with pump stations.

Habitat loss or alteration from construction of the proposed Project is described in Section 4.6, Wildlife. Construction of the proposed pipeline and the associated access roads would increase habitat fragmentation by reducing the size of contiguous patches of habitat and through loss of habitat or changes in habitat structure. Construction of the proposed pipeline right-of-way (ROW) through native grassland, shrub, and forest communities would remove vegetation, resulting in temporary unvegetated areas over the pipeline trench and adjacent construction areas. Management actions on the ROW include removal of trees and shrubs. Loss of shrublands and wooded habitats would be long term (5 to 20 years) in restored areas of the construction ROW. Restoration of construction areas would include revegetation of the ROW using seed mixes based on input from the local U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) and specific seeding requirements as requested by the landowner or the land management agency, as described in Appendix G, the Construction, Mitigation and Reclamation Plan (CMRP).

In addition to these general impacts, specific impacts and conservation measures that have been identified for threatened and endangered species and species of conservation concern are described in the following sections. Where applicable, specific impacts to threatened and endangered species and species of conservation concern that would result from construction and operation of the connected actions of the proposed Project (electrical transmission and distribution lines) are also identified.

4.8.3.1 *ESA Federally Protected and Candidate Species*

The USFWS is responsible for ensuring compliance with the Endangered Species Act (ESA) for species under their jurisdictions. The U.S. Department of State (Department), as the lead federal agency, is responsible for initiating Section 7 ESA consultation with the USFWS to determine the likelihood of effects on federally protected species. For the proposed Project, the Department, the USFWS, and Keystone worked to identify the potential occurrence of federally protected species along the proposed pipeline route. Thirteen federally protected or candidate species under the jurisdiction of USFWS were initially identified as being potentially affected by the proposed Project, of which nine were determined to require further analysis. Table 4.8-1 provides a summary of these 13 species. Described in this section are the distribution of the 13 federally protected and candidate species potentially occurring in the proposed Project area, reasons for their decline, potential impact summary, proposed mitigation, and preliminary effect determinations. The northern long-eared bat (*Myotis septentrionalis*) is also discussed in this section; although this species is not currently listed as a federally-protected species, it was recently petitioned for listing and is currently under review for listing by the USFWS, and may be listed as a threatened or endangered species in 2013.

Table 4.8-1 Summary of ESA Federally Protected and Candidate Species Potentially Occurring along the Proposed Project Route

Common Name	Federal Status	Project Conservation Measures Developed	Preliminary Findings Summary ^a
Mammals			
Black-footed ferret (<i>Mustela nigripes</i>)	Endangered/Experimental	Yes	NLAA/NLAA
Gray wolf (<i>Canis lupus</i>)	Endangered/Experimental	No	No Effect/No Effect
Birds			
Eskimo curlew (<i>Numenius borealis</i>)	Endangered	No	No Effect
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Candidate	Yes	NLAA
Interior least tern (<i>Sternula antillarum</i>)	Endangered	Yes	NLAA
Piping plover (<i>Charadrius melodus</i>)	Threatened	Yes	NLAA
Sprague's pipit (<i>Anthus spragueii</i>)	Candidate	Yes	NLAA
Whooping crane (<i>Grus americana</i>)	Endangered	Yes	NLAA
Invertebrates			
American burying beetle (<i>Nicrophorus americanus</i>)	Endangered	Yes	MALAA
Fish			
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	Endangered	Yes	NLAA
Topeka shiner (<i>Notropis topeka</i>)	Endangered	No	No Effect
Plants			
Blowout penstemon (<i>Penstemon haydenii</i>)	Endangered	No	No Effect
Western prairie fringed orchid (<i>Platanthera praeclara</i>)	Threatened	Yes	NLAA

^a NA = Not Applicable (determinations are not applied to candidate and unlisted species); NLAA = May affect, but not likely to adversely affect; NLAM = Not likely to adversely modify; MALAA = May affect, and likely to adversely affect.

The Department and the USFWS are in informal consultations regarding the 13 federally protected or candidate species. The American burying beetle (*Nicrophorus americanus*) was the only species determined to be potentially adversely affected by the proposed Project. The Department, the USFWS, and Keystone are developing conservation measures and compensatory mitigation. Three proposed implementing agreements are being developed that would go into effect only if the Department determines to issue a permit for the proposed Project. These proposed implementing agreements concern: 1) a Trust for temporary and permanent impacts; 2) a fund for monitoring habitat restoration; and 3) a restoration performance bond. Once formal consultation begins, the USFWS will formulate a Biological Opinion that would be required prior to the issuance of a Record of Decision under the National Environmental Policy Act (NEPA) by the Department or any other federal cooperating agency.

The Department has developed a draft 2012 Biological Assessment (BA) (Appendix H) working closely with USFWS, which includes assessments of potential Project impacts to federally protected species, recommended conservation measures, and final determinations. Additional information requests and conservation measures were developed during these consultation meetings.

The USFWS provided input relative to the ESA, the Fish and Wildlife Coordination Act (FWCA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and NEPA. USFWS-approved surveys were initiated in the summer and fall of 2008, spring through fall 2009, and spring and summer 2010. Supplemental filing data from July 2009 and June 2010 included survey reports for piping plover (*Charadrius melodus*), interior least tern (*Sternula antillarum*), American burying beetle, and western prairie fringed orchid (*Platanthera praeclara*). Additional surveys for various species were conducted in 2011 and 2012, including surveys for the American burying beetle in the summer of 2012 for the proposed reroute in Nebraska (Hoback 2012). Additional surveys are planned along the proposed Project route for 2013 for special-status plant species and special-status fish species. Potential impacts and mitigation measures that were identified during these surveys and through consultations with federal and state agencies are discussed below.

Federally Protected Mammals

Preliminary evaluations identified only one federally protected mammal, black-footed ferret (*Mustela nigripes*), which could potentially occur within the proposed Project area (Table 4.8-1). The gray wolf (*Canis lupus*) was eliminated from further analysis based on a No Effect determination.

Black-Footed Ferret

The primary threat to the black-footed ferret (*Mustela nigripes*) is loss of habitat via conversion of grasslands to agricultural uses. Also, widespread prairie dog eradication programs have reduced black-footed ferret habitat to less than 2 percent of what once existed.

The proposed route would cross one county in Montana and four counties in South Dakota with black-tailed prairie dog colonies. Remnant black-footed ferret habitat may occur where there are black-tailed prairie dog colonies within the proposed Project ROW. If black-footed ferrets are present in prairie dog colonies along the proposed Project route, direct impacts could include increased habitat loss and fragmentation from the disturbance of prairie dog colonies or complexes. Construction and operation activities associated with the proposed Project could cause direct mortalities resulting from collisions with construction equipment and vehicles. Other indirect impacts could include habitat alteration due to fragmentation, dust deposition, and spread of noxious and invasive plants; and disturbance due to noise and human presence. Indirect impacts could also include a reduction of prairie dog colonies (i.e., a reduction in black-footed ferret food source) due to the spread of infectious diseases such as canine distemper and sylvatic plague diseases (which could be spread from domestic animals if these are allowed to come into contact with prairie dog populations).

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, and detailed in the Biological Assessment (Appendix H), from 2008 to 2012, surveys were conducted for active prairie dog towns that could support black footed ferrets. No black-footed ferrets or active prairie dog towns suitable for supporting black-footed ferrets were

identified in the proposed Project ROW, and black-footed ferret surveys are no longer recommended in prairie dog towns in Nebraska and South Dakota.

Although the USFWS has indicated that black-footed ferrets have not been observed in the proposed Project area in South Dakota, and this area is no longer required to meet USFWS guidelines under Section 7 of ESA, the SDGFP has requested an estimate of the number of prairie dog habitat acres that would be lost to pipeline construction and operation and that additional surveys be conducted to determine the presence of black-footed ferrets in this habitat before any construction activity occurs.

Prairie dog colonies found in South Dakota and Nebraska would not require conservation measures or additional consultation under the ESA because any black-footed ferrets potentially associated with these prairie dog colonies are reintroduced and designated as non-essential experimental populations. One prairie dog town in Montana was identified near the proposed Project; however, this town was determined to be too small to support black-footed ferrets and would not be impacted by construction.

To prevent potential direct or indirect impacts to the black-footed ferret population in Montana from construction activities, should they occur close enough to the proposed Project to be potentially impacted, the following mitigation measures would be adopted and implemented by Keystone:

- Provide the USFWS with the results of Montana prairie dog colony surveys, and continue coordination with Montana USFWS Ecological Services Office to determine the need for black-footed ferret surveys in accordance with the Black-footed Ferret Survey Guidelines (USFWS 1989). Based on feedback from the USFWS, the Department has currently determined that no black-footed ferret surveys would be required.
- Complete surveys to identify prairie dog colonies in Fallon County, Montana consistent with the Final EIS to determine if any Category 3 colonies or complexes occur and could be avoided.
- Prohibit workers from keeping domestic pets in construction camps and/or worksites.
- Educate workers of how canine distemper and sylvatic plague diseases are spread (domestic pets and fleas).
- Prohibit workers from feeding wildlife.
- Report concentrations of dead and/or apparently diseased animals (prairie dogs, ground squirrels, others) to the appropriate state and federal agencies.

The proposed Project may affect, but is not likely to adversely affect, wild or reintroduced non-essential experimental populations of the black-footed ferret. This determination is based on agency provided information, the lack of potential for occurrence of wild populations of black-footed ferrets within the proposed Project area, and the commitment to follow recommended conservation measures described above. No prairie dog towns would be crossed or impacted by the proposed Project.

Northern Long-eared Bat

The northern long-eared (*Myotis septentrionalis*) bat occurs throughout North Dakota, South Dakota, and parts of Nebraska, Kansas, and Montana, although many species range maps do not include Montana as part of their range (Bat Conservation International 2012, MNHP and MFWP 2012d). Although northern long-eared bats were once common across the eastern United States, their population has recently seen a sharp decline in numbers. This decline is largely due to the rise of the fungal disease known as white-nose syndrome. The northern long-eared bat has small populations, and their tendency to hibernate in groups causes them to be very susceptible to this spreading disease. Other potential threats to northern long-eared bats include development of wind power, habitat destruction and fragmentation, hibernacula and roost disturbance, environmental contaminants, and logging. These threats, paired with the species low birth rate, can have detrimental effects on northern long-eared bats.

No adverse impacts to the northern long-eared bat are expected from proposed Project construction or operations because no summer or winter roosts are known or expected to occur in the proposed Project area, any bats that fly over the pipeline route would avoid the ground-based construction and operation activities, and Keystone would use the horizontal directional drilling (HDD) method to cross rivers thereby avoiding riparian vegetation used by the northern long-eared bat. In addition, no federally-designated critical habitat has been identified for this species, so no impacts to critical habitat for the northern long-eared bat would occur.

Federally Protected and Candidate Birds

Preliminary evaluations identified four federally protected birds (not including bald eagle, which is protected under the BGEPA, but not the ESA) and two candidate birds that could potentially occur within the proposed Project area (Table 4.8-1). In addition to federal ESA protections, all of the birds listed in this section are also federally protected under the MBTA, except for the greater sage-grouse (*Centrocercus urophasianus*). Additional federal protections under the MBTA and the BGEPA are discussed in Section 4.8.3. The Eskimo curlew (*Numenius borealis*) was eliminated from further analysis based on a No Effect determination.

Greater Sage-Grouse

Populations of greater sage-grouse (*Centrocercus urophasianus*), which depend on large areas of contiguous sagebrush, have continued to decline during the last century primarily due to habitat loss and alteration, and they now occupy about 56 percent of their original range (USFWS 2010). Primary threats to greater sage-grouse include sage brush habitat loss and fragmentation resulting from wildfire, energy development, urbanization, agricultural conversion, and infrastructure development (USFWS 2010).

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, greater sage-grouse surveys of the proposed Project route have been conducted annually since 2010, and Montana Fish, Wildlife and Parks (MFWP) and SDGFP consider 28 leks along the proposed Project route to be active in any given year. Details of these surveys, including survey results, are provided in Appendix H, the Biological Assessment.

Approximately 190 miles of the proposed pipeline route extend through areas with greater sage-grouse habitat in Montana (MFWP 2001). Of this distance, 94 miles are classified as moderate to high-quality habitat for greater sage-grouse, and 96 miles are classified as marginal habitat for

greater sage-grouse. Ground-verification surveys of habitats found that the proposed pipeline route would cross only 35.9 miles of suitable habitat, of which half of this area was considered high-quality habitat. Modifications of the previously proposed route have been made in Montana and South Dakota, to create the current proposed Project route; these modifications fall within the corridor surveyed since 2010 and would not result in any additional effects on greater sage-grouse habitat.

MFWP (2009) has mapped core greater sage-grouse habitat in Montana, which includes habitats associated with: 1) Montana's highest densities of greater sage-grouse (25 percent quartile) based on male counts; and/or 2) greater sage-grouse lek complexes and associated habitat important to greater sage-grouse distribution. The proposed route would pass through approximately 20 miles of core greater sage-grouse habitat in Montana. One approximately 3-mile-long permanent access road and one pump station would also occur within core greater sage-grouse habitat in Montana.

Based on a 3-mile buffer centered on each confirmed active lek, each unconfirmed active lek with recent greater sage-grouse observations, or each priority lek the proposed Project route would impact, there would be a total of about 86 miles of the proposed Project route overlapping a greater sage-grouse lek buffer (including 29 separate greater sage-grouse lek locations) in Montana and South Dakota (see Appendix H, Biological Assessment, for more information on greater sage-grouse lek buffer zones crossed by the proposed Project route)¹.

Studies of the effects of energy development on greater sage-grouse indicate a variety of adverse impacts to sage-grouse from sources of disturbance, such as construction and operation of facilities, road construction, and use and development of transmission lines (Naugle et al. 2009). However, many studies evaluated impacts resulting from different and higher-density types of disturbance and development than would be associated with the proposed Project (i.e., a single pipeline as compared to oil and gas field developments). Although similar types of impacts would be expected to result from construction of the proposed Project, the magnitudes would be expected to be different.

Greater sage-grouse would be especially vulnerable to pipeline construction activities in spring, when birds are concentrated on leks and where the pipeline and access roads are constructed through sagebrush communities with leks and nesting greater sage-grouse. While surveys in 2009 and 2010 verified activity at nine leks within 4 miles of the proposed Project route in Montana and South Dakota, an estimated 40 recently active lek sites within 4 miles of the proposed Project could potentially be occupied by greater sage-grouse (WESTECH 2010a). Additional greater sage-grouse surveys were conducted in 2012 (WESTECH 2012a). Construction near active leks could displace breeding birds from leks or disturb nests, resulting in a decrease in local reproduction. Traffic on roads near active leks could cause vehicle collision and/or mortality.

¹ Confirmed active lek—MFWP considered leks to be confirmed active if there is a minimum of 2 years of observation with two or more males displaying on the site, or if a single year's observation with two or more males displaying on the site was followed with evidence of lekking behavior (vegetation trampling, feathers, and droppings) during the subsequent year. Unconfirmed lek—MFWP considered leks to be unconfirmed if either the lek had not been surveyed in recent years, or if males were observed, but there was insufficient information to confirm lek activity.

Disruption of courtship and breeding behavior would be reduced by scheduling construction after 10:00 am if greater sage-grouse are observed and after mating season (usually by mid-May). Mortality to greater sage-grouse and loss of nests, eggs, and young could be avoided by scheduling construction through occupied sagebrush steppe habitats after young greater sage-grouse have become mobile and are able to fly (usually by mid-August). Greater sage-grouse chicks are precocious and are capable of leaving the nest shortly after hatching, but they may not be sufficiently mobile to avoid construction related-impacts until after they can fly.

After construction, re-establishment of sagebrush to pre-disturbance cover levels on the ROW may take 15 to 20 or more years depending on the type of sagebrush, subsequent soil moisture, extent of invasion by cheatgrass (*Bromus tectorum*), and other factors (MNHP and MFWP 2010). During this period, vegetation on reclaimed areas would likely be dominated by grasses with low densities of native forbs and shrubs. Typically, communities of big sagebrush have proven difficult to re-establish on reclaimed mining lands (Schuman and Booth 1998, Vicklund et al. 2004), and restoration may not always be possible (USFWS 2010). Growth of big sagebrush on reclaimed mining land has been shown to benefit from the application of mulch, compacting soil after seeding, and reduced competition with herbaceous species (lower seeding rate of grasses and forbs) (Schuman and Booth 1998).

New permanent access roads would be constructed in Montana and in South Dakota. One new access road in Montana would be within 4 miles of a confirmed active sage-grouse lek. A new access road in South Dakota would be within 4 miles of a lek located in Montana where greater sage-grouse were observed in 2010. The cleared ROW and the new permanent access roads in Montana and South Dakota may encourage recreational use of the ROW. Recreational use (motorized vehicles, wildlife viewing, etc.) of the area during the breeding season could have an adverse effect on greater sage-grouse reproduction.

Three of the six proposed pump stations in Montana (PS-10, PS-11, and PS-14) would be constructed within 4 miles of confirmed active leks. PS-10 is approximately 3.4 miles from Lek 744 and is not visible from the lek. PS-11 is approximately 2.9 miles from Lek 619, a confirmed active lek in the agency database, but one which has not been surveyed by agencies since 1996 and where Keystone has not observed greater sage-grouse for 3 consecutive years. PS-11 is also within 3.7 miles of Lek 1738, a lek of unconfirmed activity status where Keystone has not observed greater sage-grouse in 3 consecutive years. The pump station is not visible from either of these lek sites.

PS-14 is approximately 2.7 miles from confirmed active leks 1805 and 1430, but is not visible from either lek. PS-14 is also within 2.4 miles of Lek 1725 which has unconfirmed activity. Keystone surveys have not observed any greater sage-grouse at Lek 1725 for 3 consecutive years, and agency surveys at this lek did not observe greater sage-grouse in 2011.

One new pump station in South Dakota (PS-15) would be constructed within 3.2 miles of Lek 1437, a confirmed active lek in Montana. The pump station is not visible from Lek 1437 because of terrain. A second pump station in South Dakota (PS-16) would be constructed within 1.3 miles of the active Squaw Creek Lek.

Pipe yard 12 in South Dakota is 1 mile away from the KXL-195 Hoover lek where greater sage-grouse have been observed for 3 consecutive years. This pipe yard is dominated by grasses and is not high-quality greater sage-grouse habitat. Pipe yards are cleared of vegetation and are used to store and retrieve pipes for pipeline construction.

Based on preliminary estimates, noise from the pump stations would attenuate to approximately 55 A-weighted decibels during a 24-hour period at 0.5 mile from the proposed pump stations and would not be expected to cause disturbance to greater sage-grouse leks (Blickley and Patricelli 2012). Keystone would observe the USEPA standard of 55 dBA Ldn measured at the nearest sensitive receptor (see Section 4.12, Air Quality and Noise, for additional discussion of noise impacts and mitigation). Communication towers associated with the proposed pump stations could lead to increased collision hazard and increased predation by raptors by providing vantage perches.

Conservation measures, such as limiting construction in active lek areas to periods outside the breeding season, were designed to avoid, minimize, and compensate for impacts to the sage-grouse. Many of these measures were described in *An Approach for Implementing Mitigation Measures to Minimize the Effects of Construction and Operations of the Keystone XL Pipeline Project on Greater Sage-Grouse* (WESTECH 2010b) and *An Approach for Implementing Mitigation Measures to Minimize the Effects of Construction and Operation of the Keystone XL Pipeline Project on Greater Sage-Grouse in South Dakota* (WESTECH 2011b) which are appendices to Appendix H, the 2012 Biological Assessment. In South Dakota, Keystone worked with SDGFP to develop supplemental compensatory mitigation, which was finalized in 2012. These measures, as well as measures identified in the 2012 Final EIS, include the following:

- Conduct surveys of greater sage-grouse leks prior to construction using approved methods to determine lek locations and peak number of males in attendance: a) within 3 miles of the facility (unless the facility is screened by topography); and b) at leks identified by MFWP, BLM, and SDGFP more than 3 miles from the facility (for use as a baseline to determine construction effects on sage-grouse abundance).
- Develop a conservation plan with MFWP, SDGFP, USFWS, and BLM to address impacts to greater sage-grouse, including construction timing restrictions, habitat enhancement, and any mitigation measures that would be necessary to maintain the integrity of Core Areas or Preliminary Priority Habitat, which encompasses lek habitats and other habitat necessary for greater sage-grouse during other life stages.
- Follow all protection and mitigation efforts as identified by USFWS and SDGFP including: a) identify all greater sage-grouse leks within the buffer distances from the construction ROW set forth for the greater sage-grouse by USFWS; and b) avoid or restrict construction activities as specified by USFWS within buffer zones, between March 1 and June.
- Prohibit construction within 3 miles of active greater sage-grouse leks in suitable nesting habitat from March 1 to June 15, with an allowance for one-time equipment movement during mid-day hours through ROW areas with a timing restriction that does not require grading for equipment passage to lessen disturbance to sage-grouse leks.
- Prohibit construction within 2 miles of active greater sage-grouse leks on federal lands from March 1 to June 15.
- Reduce the mound left over the backfilled trench in areas where settling would not present a path for water runoff down slopes into sagebrush habitat; additional measures will be taken to compact backfilled spoils to reduce settling.
- Establish a compensatory mitigation fund for use by MDEQ, MFWP, and BLM to enhance and preserve sagebrush communities for greater sage-grouse and other sagebrush-obligate

species in eastern Montana (the size of the fund to be based on acreage of silver sagebrush and Wyoming big sagebrush habitat disturbed during pipeline construction within greater sage-grouse core habitat mapped by MFWP and other important habitat between approximate mileposts 95–98 and 100–121).

- To the extent practicable, limit inspection overflights of sagebrush habitat designated by MFWP to afternoons from March 1 to June 15, during operations.
- Fund a 4-year study, under the direction of MDEQ, MFWP, and BLM, to assess whether the presence of Project facilities have affected greater sage-grouse numbers based on the trends in peak number of male greater sage-grouse in attendance at leks.
- Implement restoration measures (i.e., application of mulch or compaction of soil after broadcast seeding, and reduced seeding rates for non-native grasses and forbs) that favor the establishment of silver sagebrush and big sagebrush in disturbed areas, where compatible with the surrounding land use and habitats, unless otherwise requested by the affected landowner.
- Prior to construction, conduct studies along the proposed route to identify areas that support stands of silver sagebrush and big sagebrush and incorporate these data into restoration activities to prioritize re-establishment of sagebrush communities.
- Monitor and report on establishment of sagebrush in restored areas, unless otherwise requested by the landowner, annually for at least 4 years to ensure that sagebrush plants become established at densities similar to densities in adjacent sagebrush communities. Implement additional seeding or plantings of sagebrush if necessary.
- Establish criteria in conjunction with MDEQ, MFWP, and BLM to determine when restoration of sagebrush communities has been successful based on pre- and post-construction studies in addition to revegetation standards.
- Use locally adapted sagebrush seed, collected within 100 miles of the areas to be reclaimed, unless otherwise requested by the affected landowner (seed would be collected as close to the proposed Project route as practicable, based on regional seed production and availability).
- Monitor cover and densities of native forbs and perennial grasses exclusive of noxious weeds on restored areas and reseed with native forbs and grasses where densities are not comparable to adjacent communities.
- Work in conjunction with the landowner to appropriately manage livestock grazing of reclaimed areas until successful restoration of sagebrush communities has been achieved (livestock grazing in restored sagebrush communities may promote establishment of sagebrush—see greater sage-grouse implementation plan in Montana in Appendix H, 2012 Biological Assessment).
- Implement measures to reduce or eliminate colonization of restored areas by noxious weeds and invasive annual grasses such as cheatgrass to the extent that these plants do not exist in undisturbed areas adjacent to the ROW (noxious weed management plans would be developed and reviewed by appropriate county weed specialists and land management agencies for each state crossed by the proposed Project route).

- Establish a compensatory mitigation fund for temporary and permanent impacts to greater sage-grouse habitat for use by SDGFP to enhance and preserve sagebrush communities within the sagebrush ecosystem in South Dakota, which is found within the following counties: Butte, Custer, Fall River, and Harding counties and, to a lesser degree, Perkins and Meade counties.
- Develop a research fund, in consultation with SDGFP, and managed by a third party to evaluate the effects of pipeline construction on greater sage-grouse.
- Monitor leks that are within 3 miles of the project footprint in South Dakota that are within the viewshed of the construction ROW if construction takes place between March 1 and June 15.
- Implement, in consultation with SDGFP, a modified 3-mile buffer between March 1 and June 15 around active greater sage-grouse leks. The buffer would be modified on a lek-by-lek basis to account for differences in topography, habitat, existing land uses, proximity of the Project to the lek, and line-of-sight between the proposed Project and each lek.
- Restrict construction equipment activity in South Dakota to occur only between 10 am and 2 pm to avoid impacts to breeding greater sage-grouse from March 1 through June 15 in areas where a lek is either within 3 miles of the ROW and visible from the ROW; or within 1 mile of the ROW.

With incorporation of the proposed Project CMRP (Appendix G) and the mitigation measures described above, construction and operation of the proposed Project would not likely affect greater sage-grouse courtship activities on leks and would likely result in a minor impact on nesting birds. However, construction would likely result in an incremental loss of sagebrush habitat that is currently used for feeding and nesting by greater sage-grouse, and re-establishment of that habitat could require 15 to 20 years or longer.

Interior Least Tern

Primary threats to the interior least tern (*Sternula antillarum*) are channelization of river systems and construction of dams that alter the rivers' natural flow regimes. This can cause water levels to remain high during the nesting season, eliminating nesting areas and forcing the birds to choose less ideal nest sites. Flood control has also caused nesting habitat to decline due to vegetation encroachment on river banks. River recreation has increased in recent decades, causing more disturbances to prime nesting habitats by boaters, fishers, campers, and all-terrain vehicles. Excessive human disturbance has been shown to decrease nesting success and productivity, and this remains a threat to the interior least tern population throughout its range (NGPC 2012).

The proposed Project route would cross several rivers at which suitable feeding and nesting habitat exists for the interior least tern. These areas include the Yellowstone River and the Missouri River below Fort Peck dam, in Montana; the Cheyenne River in South Dakota; and the Platte River, Loup River, and Niobrara River in Nebraska. As noted in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, recent surveys for this species identified least terns along the Niobrara River in Keya Paha and Rock counties, and along the Loup River in Nance County. However, additional surveys are needed along the Missouri, Yellowstone, and Cheyenne rivers in Montana and South Dakota to verify presence/absence,

because previously conducted surveys along these rivers occurred during a flood event when no habitat was viewable for this species.

Potential impacts from construction of the proposed Project could include disturbance to interior least tern habitat. The rivers listed above that are associated with interior least tern habitat would all be crossed using the HDD method to reduce disturbance to nesting and feeding habitats. However, proposed Project construction near these rivers could potentially cause temporary impacts to breeding and nesting interior least terns. Nest abandonment or predation could occur if construction is scheduled during the breeding season (April 15 through August 15), although construction is expected to be complete prior to active nesting. Limited clearing of vegetation and limited human access would be required within the riparian areas of these rivers for the TruTracker® System (a wire used to guide the HDD). A maximum 3-foot-wide hand-cleared path would be used for this purpose during HDD drilling.

Indirect construction impacts could result from the withdrawal of water for hydrostatic testing (pressure testing of the new pipeline) from each of the rivers used as a water source. Food supplies (fish) could be reduced and predators may be afforded easier access to nest sites. However, impacts to the interior least tern from temporary water reductions during hydrostatic testing would be avoided since the volume of water needed would be withdrawn at a rate less than 10 percent of the baseline daily flow and returned to its source within a 30-day period. The one-time water use for hydrostatic testing, the low volume of water used (compared to daily flows in the river basin), and the return of water to its source would not be expected to impact least tern nesting or feeding habitats.

The following USFWS conservation measures would apply if construction-related activities, including HDD and hydrostatic testing, were to occur during the interior least tern nesting season (April 15 to September 1):

- Conduct pre-construction surveys within 0.25 mile from suitable breeding habitat at the proposed Platte, Loup, and Niobrara river crossings in Nebraska; the proposed Cheyenne River crossing in South Dakota; and the proposed Yellowstone River crossing in Montana.
- Conduct daily surveys for nesting terns when construction activities occur within 0.25 mile of potential nesting habitat.
- Prohibit construction within 0.25 mile of any occupied nest until the young have fledged or otherwise abandoned the nest.
- Down-shield lights if HDD occurs at night, if the site lacks vegetative screening, and if an active interior tern nest is located within 0.25 mile from the HDD site(s).

The proposed Project could affect, but is not likely to adversely affect interior least terns based on the use of the HDD crossing method at the proposed Missouri River, Yellowstone River, Cheyenne River, Niobrara River, Platte River, and Loup River crossings, and based on implementation of the recommended conservation measures identified by the USFWS.

Piping Plover

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, potential habitat for piping plover (*Charadrius melodus*) is present in the proposed Project ROW along the Niobrara, Loup, and Platte rivers in Nebraska. Keystone surveyed for

pipings plovers at the proposed crossings of the Missouri, Platte, Loup, and Niobrara rivers in July 2008, June 2011, and June and July 2012. No nesting piping plovers were identified within sight of the proposed crossings of any of these rivers. Surveys would be repeated at these river crossings prior to construction to ensure that no nests have been built within 0.25 mile of the proposed ROW or any areas that would be affected by construction activities.

No direct impacts to piping plover breeding habitats would occur in Nebraska at the Niobrara, Loup, or Platte rivers because pipeline construction across these rivers would be completed using the HDD method. Construction is expected to be complete prior to the time of year when nests would potentially be active. Limited clearing of vegetation and limited human access would be required within the riparian areas of these rivers for the TruTracker® System (a 3-foot hand cleared path would be created) used during HDD drilling and to access these rivers to withdraw water for hydrostatic testing.

Indirect impacts to breeding habitats could result from increased noise and human presence at work sites if breeding piping plovers occur within 0.25 mile of these sites.

Indirect impacts to piping plovers from temporary water reductions during hydrostatic testing would be negligible since the volume of water needed would be withdrawn at a rate less than 10 percent of the baseline daily flow and returned to its source within a 30-day period.

The following conservation measures were developed in consultation with the USFWS, and would apply if construction-related activities, including HDD and hydrostatic testing, were to occur in suitable habitat during the piping plover nesting season (April 15 through September 1):

- Conduct pre-construction surveys within 0.25 mile of the construction ROW at the Niobrara, Loup, and Platte rivers in Nebraska.
- Conduct daily surveys for nesting piping plovers when construction activities occur within 0.25 mile of potential nesting habitat.
- Suspend construction within 0.25 mile of active nests, until the fledglings have left the nest area.
- Use directional lighting if night time operations occur during HDD and a vegetative screen is limited.

Sprague's Pipit

As of 2010, there were an estimated 870,000 Sprague's pipits (*Anthus spragueii*) in North America, with populations declining approximately 3 percent per year since 1980 in the United States (Jones 2010). The species decline is primarily attributable to agriculture and subsequent habitat loss, degradation, and fragmentation through conversion to seeded pasture, hayfields, and croplands, as well as overgrazing by livestock (Jones 2010). Sprague's pipits are also threatened by habitat loss and degradation from overgrazing, mowing, and reduced fire frequency; energy development; introduced and invasive plants; and drought (Jones 2010).

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, Sprague's pipits are known to occur in the Project area, based on relative density and recent observations contained in the Montana Field Guide (MNHP and MFWP 2012b). Data indicate that the highest likelihood of Sprague's pipit in the proposed Project area is in native grasslands north of the Missouri River (MNHP and MFWP 2012b) although the species is also

known to occur in native grasslands in eastern Montana and northwestern South Dakota. In Montana, the proposed Project route would cross and may contribute to fragmentation of an estimated 164.4 miles of high-quality native grasslands, and outside of the habitat north of the Missouri River there are approximately 87 miles of native, mixed-grass prairie that could serve as suitable habitat depending on grazing regimes and adjacent human activity. In South Dakota, the proposed Project route would cross and may contribute to fragmentation of an estimated 103.6 miles of high-quality native grasslands in 17 locations in South Dakota. In Nebraska, Sprague's pipits are considered uncommon migrants.

The proposed Project may cause grassland habitat loss, alteration, and fragmentation; loss of eggs or young during construction; and facilitated raptor predation from power poles from associated power lines. To reduce impacts to native grasslands and wildlife, the following measures identified in the proposed Project CMRP (Appendix G) would be implemented:

- Seed disturbance areas in native range with a native seed mix after topsoil replacement.
- Monitor the ROW to determine the success of revegetation after the first growing season, and for areas in which vegetation has not been successfully re-established, reseed the area.
- Control unauthorized off road vehicle access to the construction ROW through the use of signs; fences with locking gates; slash and timber barriers, pipe barriers, or boulders lined across the construction ROW; or through planting conifers or other appropriate trees or shrubs in accordance with landowner or manager request.

The following additional measures would be employed to protect Sprague's pipit:

- Develop a Migratory Bird Conservation Plan in consultation with USFWS to comply with the MBTA and implement provisions of Executive Order 13186 by providing benefits to migratory birds and their habitats within the states where the proposed Project would be constructed, operated, and maintained.
- If construction occurs during the April 15 to July 15 grassland ground-nesting bird nesting season, complete nest-drag surveys to determine the presence or absence of nests on federal land in eastern Montana.
- Delay construction activity between April 15 and July 15, within 330 feet of discovered active nests in eastern Montana (MDEQ and MFWP).

Whooping Crane

Power lines associated with the proposed Project are collision hazards to migrant whooping cranes (*Grus americana*). Recent studies conducted by the USFWS in conjunction with University of Nebraska researchers have documented migratory bird mortalities, including cranes, from collisions with two existing 69-kV transmission lines that cross the Platte River (Murphy et al. 2009; USFWS 2009; Wright et al. 2009). One study conducted during the spring whooping crane migration in 2007 estimated that 165 to 210 sandhill cranes did not survive collisions with two power lines (Wright et al. 2009). No evidence of whooping crane mortality was observed during that study. Bird diverter devices (such as FireFly™ bird diverters) may reduce crane collisions and mortality from power lines by alerting cranes to the presence of power lines in their flight path (Murphy et al. 2009). Primary threats to the whooping crane are

habitat loss and alteration. Habitat alteration through water diversion is a major threat along the Platte River and other large riverine migration stopover habitats.

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, the proposed Project in South Dakota would cross through both the 75 percent (60 mile wide corridor) and 90 percent (170 mile wide corridor) central flyway whooping crane migration corridor, and most of the proposed Project route in Nebraska would be within the 90 percent migration corridor. The proposed Project route in Montana is west of the whooping crane migration corridor. Migrating whooping cranes could roost or feed in suitable habitat within the proposed Project area.

Temporary displacement of migrating whooping cranes from construction noise could occur if construction occurred near migratory stopover habitats. The use of the HDD method at major river crossings would prevent potential roosting and feeding habitat loss or alteration. In other areas along the proposed Project route, revegetation (particularly within riparian zones and in wetland habitats) would reduce habitat impacts. Temporary water withdrawals to support hydrostatic testing are not expected to result in impacts to the whooping crane since the volume of water needed would be withdrawn at a rate less than 10 percent of the baseline daily flow and returned to its source within a 30-day period.

The following conservation measures, based on USFWS consultation, would apply if pipeline construction-related activities were to occur in close proximity to migrating whooping cranes:

- During spring and fall whooping crane migration periods (March 15–May 31, and September 1–November 31, respectively), Environmental Monitors would complete a survey of any wetland or riverine habitat areas potentially used by whooping cranes in the morning (prior to sunrise) and afternoon (after 4:00 pm), before starting equipment. These surveys would follow the Whooping Crane Survey Protocol previously developed by the USFWS and NGPC (USFWS 2012).
- Cease work if whooping cranes are spotted and contact the USFWS and appropriate state agency representative in Montana, South Dakota, or Nebraska for further instruction. Work could proceed if whooping cranes leave the area. The compliance manager² would record the whooping crane sighting, bird departure time, and work start time would all be recorded on a survey form.
- The USFWS would notify the compliance manager if whooping cranes are within the construction area by using data gathered from the whooping crane tracking program. If whooping cranes land within an area where an HDD crossing is already in progress or where construction is active, this activity would be allowed to continue.

Down-shield lights if HDD occurs at night during the spring and fall whooping crane migrations, in areas that provide suitable habitat. The proposed Project could affect, but is not likely to adversely affect whooping cranes. This determination is based on the rarity of the species, its status as a migrant through the proposed Project area, Keystone's commitment to follow recommended conservation measures identified by the USFWS, and that power providers will

² The compliance manager for Keystone will be the point person for communication with the USFWS as required. The monitors that will be used in the field will be reporting to the environmental inspectors, who in turn report to the compliance manager. If required, the monitors will discuss any required interpretation or issues with the USFWS with the compliance manager.

consult with the USFWS regarding ways to minimize or mitigate impacts to the whooping crane and other threatened and endangered species for new distribution lines to the pump stations and follow recommended avoidance and conservation measures of the USFWS.

Federally Protected Reptiles

There are no federally protected reptiles associated with the areas that would be crossed by the proposed Project route.

Federally Protected and Candidate Fish

Preliminary evaluations identified one federally protected fish that could potentially occur within the proposed Project area (Table 4.8-1). The Topeka shiner (*Notropis topeka*) was eliminated from further analysis based on a No Effect determination.

Current distribution of the pallid sturgeon (*Scaphirhynchus albus*) includes the upper and lower Missouri River drainage, the lower Yellowstone River drainage, the upper and lower Mississippi River drainages, and the lower Ohio River drainage (NatureServe 2009). The pallid sturgeon is one of the rarest fish of the Missouri and Mississippi rivers. This sturgeon is adapted to habitat conditions that existed in these large rivers prior to their wide-scale modification by dams, diversions, and flood control structures.

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, the pallid sturgeon occurs within the proposed Project area at the proposed crossing of the Missouri River below (east of) Fort Peck Dam, the proposed crossing of the Milk River in Valley County, Montana, and the proposed crossing of the Yellowstone River downstream of Fallon, Montana (MNHP and MFWP 2012a). Pallid sturgeon also occur in the lower Platte River downstream from the proposed Project crossing in Nebraska (NGPC 2011).

Potential impacts to pallid sturgeon would be reduced as a result of using the HDD crossing method at the Milk, Missouri, and Yellowstone rivers. The proposed minimum depth for HDD pipeline sections is 25 feet below the streambed, which should provide substantial margin of safety during potential river scour during peak flood events. The HDD method avoids any direct disturbance to the river, channel bed, or banks. While the HDD method poses a small risk of frac-out (i.e., release of bentonite-based drilling fluids), potential releases would be contained by best management practices that are described within the HDD Contingency Plans required for drilled crossings. Most leaks of HDD drilling fluids occur near the entry and exit locations for the drill and are quickly contained and cleaned up. Frac-outs that may release drilling fluids into aquatic environments are difficult to contain primarily because bentonite readily disperses in flowing water and quickly settles in standing water. Should this type of release occur, bentonite is non-toxic but in sufficient concentration may physically inhibit respiration of adult fish and eggs.

The Platte, Missouri, and Yellowstone rivers have been identified as potential water sources for hydrostatic testing. Surface water depletions associated with the Platte River basin in Nebraska may affect pallid sturgeon habitats by reducing the amount of water available for this species in the lower Platte River. Impacts to the pallid sturgeon from temporary water withdrawals during hydrostatic testing in the lower Platte River Basin would be avoided since the volume of water needed would be withdrawn at a rate less than 10 percent of the baseline daily flow and returned to its source within a 30-day period.

Larval life stages could be entrained (captured in the pumps) through water withdrawals for both HDD and hydrostatic testing in the Missouri and Yellowstone rivers, and would not likely survive. Newly emerged pallid sturgeon larvae drift with currents for many days and over large distances before they achieve any volitional movements (Braaten et al. 2008).

The following conservation measures would avoid or minimize potential impacts to the pallid sturgeon, which could occur through HDD or hydrostatic testing of the Milk, Missouri, and Yellowstone rivers:

- At streams and rivers that would be crossed by the HDD method, screen the water pump intake hose using an appropriate mesh size approved by the USFWS, to prevent entrainment of larval fish or other aquatic organisms.
- Control pump withdrawal rates, reducing the potential for entrainment or entrapment of aquatic species.
- Periodically check all water pump intake screens for entrainment of fish during water withdrawals, and care would be taken to prevent erosion or scouring of the waterbody bed and banks during discharge. Should a sturgeon become entrained, all pumping operations would immediately cease and the compliance manager for Keystone would immediately contact the USFWS to determine if additional protection measures would be required.
- Use at least a 100-foot setback from the water's edge for the HDD drill pads, at the HDD crossings at the Yellowstone and Missouri rivers in Montana.

The proposed Project could affect, but is not likely to adversely affect the pallid sturgeon. This determination is based on implementation of the HDD crossing method at the Milk, Missouri, and Yellowstone rivers; the screening of water pump intakes to prevent entrainment of larval fish or debris; and implementation of USFWS recommended conservation measures. The connected actions would not likely coincide with the distribution of the pallid sturgeon in Montana and North Dakota and would likely have no effect on the pallid sturgeon, although full environmental review of these actions would be conducted separately during the permitting process for these actions.

Federally Protected Invertebrates

Preliminary evaluations identified one federally protected invertebrate species that could potentially occur within the proposed Project area (Table 4.8-1). The American burying beetle (*Nicrophorus americanus*) is known to exist in isolated colonies in at least six states, among them South Dakota, Nebraska, and Kansas (Backlund and Marone 1997, Bedick et al. 1999). American burying beetles have disappeared from over 90 percent of their historical range, even though they are considered feeding habitat generalists. The decline of the American burying beetle has been attributed to habitat loss, alteration, and degradation. Developed land and land that has been converted from agricultural, grazing, and other uses, often favors scavenging mammals and birds that compete with carrion beetles for carrion. Additionally, these types of habitat alterations have generally led to declines in ground nesting birds, which probably historically provided a large portion of the carrion available.

Fire suppression in prairie habitats allows the encroachment of woody plant species, particularly the eastern red cedar (*Juniperus virginiana*), which is thought to degrade habitat for burying beetles by limiting their range to forage for carrion. The red-imported fire ant (*Solenopsis*

invicta), which has extended its range in the southeastern and south central United States and is most numerous in open, disturbed habitat, has also been identified as a cause for the decline of the American burying beetle (USFWS 2008). Surveys for the American burying beetle occurred in suitable habitat (rangeland, hay meadows) in Antelope, Holt, Keya Paha, and Boyd counties in Nebraska during the summer of 2012 (see Appendix H, the Biological Assessment, for detailed information on these surveys). As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, these surveys identified low numbers of American burying beetles in Holt and Keya Paha counties of Nebraska, and none in Antelope and Boyd counties. The proposed Project would cross approximately 50 miles of suitable habitat for this species in Nebraska.

American burying beetle surveys were not conducted in South Dakota specifically for this Project, but surveys in 2005 for this species identified a relatively high concentration of American burying beetles in southern Tripp County, which the Project route would cross through. The proposed Project route would cross through approximately 33 miles of suitable habitat for this species in South Dakota.

The proposed Project would temporarily impact approximately 408 acres of habitat and permanently impact approximately 221 acres of habitat in South Dakota, and would temporarily impact approximately 727 acres and permanently impact approximately 372 acres of habitat in Nebraska (1,768 acres total).

Direct impacts to American burying beetles could occur as a result of proposed Project construction during vegetation clearing, site grading, and trench excavation, which could result in temporary habitat loss, potential alteration of suitable habitat to unsuitable habitat, temporary habitat fragmentation where the pipeline is not already located next to other utilities, and potential mortality to eggs, larvae, and adults through construction vehicle traffic and exposure during excavation. In addition, artificial lighting has the potential to disrupt American burying beetle feeding behavior and increase mortality through predation. Most normal construction would take place during the daylight hours and construction areas would use artificial lighting infrequently. Activities that could potentially require artificial lighting include critical pipeline tie-ins, HDD crossings, and certain work required after sunset due to weather, safety, or other requirements. HDD crossings would require 24-hour operation until the crossing is completed.

Burying beetles, including the American burying beetle, are sensitive to soil moisture and die quickly when desiccated (Bedick et al. 2006). During construction, soil moisture may be reduced across the ROW as the site is prepared by removing topsoil and grading. Equipment operations within the ROW could compact the substrate. During reclamation, sub-soil and top-soil would be de-compacted and vegetation cover would be re-established within both the temporary and permanent ROW. Sub-soil and top-soil compaction would be relieved by discing, or chiseling using a disc or harrow pulled by a tractor. Native vegetation seed would be used, unless otherwise directed by landowners, land managers, or regulatory agencies with jurisdiction. These actions would prevent compaction of the soil and would allow vegetation types beneficial to the beetle to establish.

The activity period for the American burying beetle across its range is generally late April through September (USFWS 1991) and is associated with air temperature. Peak activity occurs when temperatures are 60 degrees Fahrenheit (°F) or greater at midnight. The American burying beetle overwinters as an adult by burrowing in soil (Schnell et al. 2008). Schnell et al. (2008)

found that in Arkansas, surviving American burying beetles overwintered at an average depth of 6 centimeters (2.4 inches) with some as deep as 20 centimeters (6 inches). Thermal models indicate that heat generated by the proposed Project pipeline would warm soil surface temperatures by as much as 10°F in northern latitudes during January to April (Appendix S, Pipeline Temperature Effects Study). The thermal models indicate that heat dissipation effects would occur primarily within approximately 3.5 feet of the pipeline compared to background temperatures (Appendix S, Pipeline Temperature Effects Study). Soil heating associated with proposed Project operation could increase American burying beetle mortality by triggering early emergence when prey are scarce and cold air temperatures cause emergent adult mortality; elevated temperatures could also increase metabolic rates such that overwintering beetles starve prior to emergence, and they could also cause drying of soils, causing beetles to desiccate (Bedick et al. 1999).

During operations, lights associated with aboveground facilities may attract American burying beetles, particularly if the lights emit wave lengths in the ultraviolet spectrum. Facilities associated with the pipeline would generally not be lighted, although a single light would be used above pump station doors for employee safety. One pump station in Holt County, Nebraska occurs in habitat within the known or suspected range of the American burying beetle. This is not expected to cause a substantial issue with regard to American burying beetle attraction.

It is likely that all direct impacts to the American burying beetle may not be avoided during construction activities. In compliance with the ESA, Keystone has agreed to develop in conjunction with the USFWS a habitat conservation Trust to provide monetary compensation that would be used by a third-party non-profit organization for habitat acquisition or other conservation measures as compensatory mitigation.

General conservation measures that have been discussed during consultation between USFWS, the Department, state resource agencies, and Keystone that would avoid or minimize potential impacts to the American burying beetle include:

- Prior to construction disturbance and grading of the ROW, trap adult American burying beetles along and relocate them from the construction ROW in Nebraska, where access is available. Trapping and relocation would adhere to the Nebraska American Burying Beetle Trapping Protocol (USFWS and NGPC 2008)³. Trapping and relocating American burying beetles is not authorized in South Dakota.
- Mow and windrow vegetation during the trap and relocate period to temporarily reduce habitat suitability by drying out the soil surface. Conduct mowing so that vegetation is at most 8 inches in height. Conduct windrowing to remove vegetation residue. Implement mowing and windrowing only in Nebraska, not in South Dakota.
- After trap and relocate efforts are completed in Nebraska, a biologist would travel the ROW to remove any carcasses that may be present within the ROW to avoid attracting American burying beetles back to the ROW.

³ Trapping and relocation of American burying beetles would result in the take of American burying beetles, through handling and release away from the proposed project site. Such take may be authorized only in a USFWS Biological Opinion incidental take statement.

- During construction in the American burying beetle range in Nebraska, a biologist would travel the ROW weekly to remove any carcasses that may be present within the ROW to avoid attracting American burying beetles back to the ROW.
- Train all workers operating in American burying beetle habitat along the proposed Project ROW in American burying beetle conservation efforts. In the training, include a discussion of American burying beetle habitat, biology, reasons for their decline, and worker requirements relative to American burying beetle protection (e.g., removing food wastes from the ROW each day, reporting any American burying beetle sightings to an Environmental Inspector, and avoiding bringing dogs and cats to the ROW). Provide each construction worker operating in American burying beetle habitat with a full color Endangered Species Card, which includes a picture of the American burying beetle and a summary of relevant conservation information and requirements.
- In American burying beetle habitats, post signs at all access points to the ROW identifying the areas as American burying beetle habitat and reminding workers to follow special restrictions in the area.
- Down-shield lighting and use sodium vapor-type lights at ancillary facilities in American burying beetle habitat, to avoid attracting American burying beetles to the construction or operation site.
- Keystone would provide compensation for temporary construction and permanent operations impacts to the American burying beetle as part of a habitat conservation trust in areas where American burying beetles are likely to be impacted, including southwest of Highway 18 in Tripp County, South Dakota, and Keya Paha and Holt counties, Nebraska. Base compensation on total acres impacted where American burying beetle presence is confirmed; no compensation would be required for poor habitat. Modify compensation by habitat quality rating multipliers, with prime habitat compensation at 3 times the total impact acres; good habitat at 2 times the total impact acres; fair habitat at 1 times the total impact acres; and marginal habitat at 0.5 times the total impact acres. In Nebraska only, no compensation would be provided for habitat where no American burying beetles have been found. In South Dakota, compensation would be provided based on only habitat quality rating multipliers and not American burying beetle survey information. Temporary habitat impacts would be scaled for the period of time anticipated for recovery of vegetation cover at 4 years over the 50-year life of the proposed Project, or 8 percent of total calculated impacts. All compensation would be compliant with agreements between the Department, the USFWS, and Keystone.
- Provide funding for compliance monitoring. The Department would designate an agreed upon third-party that would work with the Department and the USFWS to ensure that vegetation restoration efforts are successful for American burying beetle habitat, as discussed during consultation among the Department, the USFWS, and Keystone.
- Keystone may set aside a reclamation performance bond. The bond would be applied to supplemental vegetation restoration that may be necessary if restoration for American burying beetle habitat fails, as discussed during consultation among the Department, the USFWS, and Keystone.

In addition to the conservation measures outlined above, state-specific conservation measures for the American burying beetle have been recommended by respective USFWS offices and state resource agencies. In South Dakota, these include:

- Build the construction camp near Winner, South Dakota on cropland very close to Winner, and/or north of Highway 18 in Tripp County.
- Place the two pipe stockpile sites planned for Tripp County on cropland, or north of Highway 18.
- Build the Gregory County, South Dakota contractor yard on cropland, or north of Highway 18.
- Avoid working at night in Tripp County if possible, because the American burying beetle is attracted to light at night. If working at night cannot be avoided, only use lighting between September 1 and June 1.

In Nebraska, state statutes do not provide for the incidental take of state-protected endangered species. The combined guidance plan of the Nebraska Game and Parks Commission (NGPC) and the USFWS Grand Island Field Office requires the implementation of two conservation measures: a measure entitled Capture and Relocation Conservation Measures and a measure entitled Maintaining Clear Activities (USFWS and NGPC 2008). These measures would be implemented prior to construction through areas occupied by the American burying beetle as directed to reduce the incidental take of the species in Nebraska. In addition, to offset unavoidable impacts to American burying beetles, compensatory mitigation for species take would be provided.

The proposed Project may affect, and is likely to adversely affect, the American burying beetle. This determination is based on the location of the proposed Project within the known range and habitat of the American burying beetle and the results from surveys. Even if trap and relocation efforts were to occur along the proposed construction ROW in these segments, the proposed Project could result in the incidental take of American burying beetles during construction or operations. The Department and Keystone would continue to work with the USFWS to refine conservation measures for minimizing incidental take and to quantify estimated incidental take for development of compensatory mitigation, through the formal Section 7 ESA consultation process for the American burying beetle.

Federally Protected Plants

Information on federally protected and candidate plants potentially found along the proposed Project route was provided by the USFWS, the various state Natural Heritage Programs (NHPs), state agencies, and field surveys. The NHPs provided information on the status of plant populations within individual states and, in some cases, surveys were completed along the proposed Project route. Potential occurrence within the ROW was evaluated for each plant based on its known distribution and habitat requirements. One federally protected plant is expected to potentially occur within the proposed Project area—the western prairie fringed orchid (*Platanthera praeclara*). The blowout penstemon (*Penstemon haydenii*) was eliminated from further analysis based on a No Effect determination.

The western prairie fringed orchid is presently known to occur in six states (Iowa, Kansas, Minnesota, Missouri, Nebraska, and North Dakota), and appears to be extirpated from South

Dakota (USGS 2006b, USFWS 1996). Most remaining populations are found in North Dakota and Minnesota, with about three percent of the populations found in the southern portion of its historical range (USFWS 1996). The spread of invasive plants into prairie swales has had a negative effect on western prairie fringed orchid populations (USFWS 2007b). Invasive plants which may displace the western prairie fringed orchid through competition include: leafy spurge (*Euphorbia esula*), Kentucky bluegrass (*Poa pratensis*), and Canada thistle (*Cirsium arvense*) (USFWS 2007b). Other threats to the long-term survival of western prairie fringed orchid include the use of herbicides, heavy livestock grazing, early haying, habitat fragmentation, river channelization, river siltation, and road and bridge construction (USGS 2006b).

As discussed in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern, no western prairie fringed orchids were located along the proposed Project route in Nebraska in 2012, although suitable habitat was present in several areas, while other areas of potentially suitable habitat were not surveyed due to access denial. The western prairie fringed orchid will be assumed to be present if suitable habitat is present but access to survey for the species was denied.

Pipeline construction could potentially disturb western prairie fringed orchids when vegetation is cleared and graded. Construction of permanent ancillary facilities could displace plant communities for the lifetime of the proposed Project. Revegetation of the proposed pipeline ROW could introduce or expand invasive species, especially leafy spurge, Kentucky bluegrass, and Canada thistle, into the proposed Project area, potentially contributing to the decline of western prairie fringed orchid. Weed and vegetation monitoring plans would be implemented to prevent the spread of invasive species as a consequence of proposed Project construction and operation (see Appendix G, CMRP).

The species can be impacted through disturbance to its habitat. This plant may also be impacted by alterations to the hydrology of sub-irrigated wetland habitat areas along the Platte River resulting from depletions to the Platte River system. Operation of the proposed Project would not be expected to result in impacts to the western prairie fringed orchid. Clearing of trees and shrubs in the permanent ROW would be required for operational monitoring. However, since this species inhabits open native prairie, no tree or shrub clearing would occur within habitat suitable for the species. If herbicides must be used for noxious weed control, application would be conducted by spot spraying. Populations of western prairie fringed orchid would be identified prior to herbicide application and herbicides would not be used in these areas.

According to a Pipeline Temperature Effects Study (Appendix S), the pipeline does have some effect on surrounding soil temperatures, primarily at pipeline depth, in an area surrounding the pipe. Effects of pipeline-elevated soil temperatures vary seasonally. Heat effects in soil near the surface, where most plant root systems are located, are less pronounced than near soil around the pipe. Surficial soil temperatures relevant to vegetation are impacted mainly by climate (such as air temperature and plant water availability) with negligible effect attributed to the operating pipeline. This is because the largest increase in temperature, in the summer months, is found within 24 inches of the pipeline. In addition, a minimum of 4 feet of cover over the top of the pipeline would result in minimal impacts to vegetation. Therefore, there would be no effects of heat dissipation from the pipeline for the western prairie fringed orchid.

The following mitigation measures would be implemented where the western prairie fringed orchid has been identified in the proposed Project area, or where suitable habitat was identified

for the species but species surveys have not been conducted when the plant was flowering to verify presence/absence:

- Complete presence/absence surveys prior to construction within areas identified with potentially suitable habitat where access has been denied. Survey results would be submitted to the USFWS for review.
- Route the pipeline around individual plants or populations within the proposed Project footprint.
- Transplant individual plants that would be affected by construction activities to other locations where suitable habitat is available, when feasible and/or when approved by land owner if on private land.
- Reduce the width of the construction ROW in areas where populations have been identified, to the extent possible.
- Salvage and segregate topsoil appropriately where populations have been identified to preserve native seed sources in the soil for use in re-vegetation efforts in the ROW.
- Restore wet meadow habitat using a seed mix approved by the NRCS and USFWS.
- Monitor restoration of construction-related impacts to wet meadow habitats along the proposed Project route, that were identified as suitable for the western prairie fringed orchid, consistent with U.S. Army Corps of Engineers (USACE) guidelines which indicate monitoring for a five-year period for successful re-establishment of wetland vegetation.
- Provide compensation for temporary construction and permanent operational impacts to the western prairie fringed orchid as part of a Trust. Compensation would be based on total acres impacted where western prairie fringed orchid presence was confirmed and in areas with suitable habitat that were not surveyed during the blooming period. Compensation would not be provided for habitat in areas where surveys were completed for western prairie fringed orchids and they were not detected.

The proposed Project may affect, but is not likely to adversely affect the western prairie fringed orchid. This determination is based on the route's proximity to the extant western prairie fringed orchid range, the presence of an identified and avoided population, the existence of suitable habitat within the proposed Project area, Keystone's commitment to implement avoidance and conservation measures that includes providing compensation for impacts to the western prairie fringed orchid where presence has been confirmed and where suitable habitat as identified by the USFWS has not been surveyed, and power providers will consult with the USFWS regarding ways to minimize or mitigate impacts to the western prairie fringed orchid and other threatened and endangered species affected by construction and follow recommended avoidance and conservation measures of the USFWS.

4.8.3.2 Bureau of Land Management Sensitive Animals and Plant Species

BLM has responsibility for the designation and protection of sensitive species on federal lands that require special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. The proposed Project route would cross federal lands in Montana. BLM Montana offices evaluate potential Project impacts on BLM sensitive species, which include species that have been determined, in coordination with the

Montana National Heritage Program (MNHP), MFWP, and the U.S. Forest Service, to be recommended for sensitive designation. BLM also evaluates both federal candidate species and federal delisted species within five years of delisting. Federal candidate species are addressed in Section 4.8.3.1 and the federal delisted bald eagle and peregrine falcon are discussed in more detail in Section 4.8.3.3. The proposed Project route would cross about 42.5 miles of BLM land in Montana. All BLM designated sensitive animals and plants in Montana are also Montana-designated species of concern. Analyses and discussions of state protected species, some of which are also BLM sensitive species, are presented in Section 4.8.3. The BLM sensitive species that have the potential to occur within the proposed Project area include 8 mammals, 29 birds, 5 reptiles, 3 amphibians, 5 fish, and 4 plants. These species are discussed in detail in Section 3.8, Threatened and Endangered Species and Species of Conservation Concern.

Of these BLM sensitive species discussed in Section 3.8, conservation measures were developed for three of them—the greater sage-grouse, swift fox (*Vulpes velox*), and mountain plover (*Charadrius montanus*). Proposed Project-related impacts and conservation measures developed in conjunction with the MDEQ, MFWP, and USFWS specific to the greater sage-grouse, and sagebrush habitats, are described in Section 4.8.3.2. Proposed Project-related impacts and conservation measures developed in conjunction with the MDEQ and MFWP, specific to the swift fox, are described in Section 4.8.3.3. Proposed Project-related impacts and conservation measures developed for the mountain plover are described below.

Mountain plovers are not expected to occur in the proposed Project area in South Dakota, Kansas, or Nebraska. This species occurs west of the proposed Project area during nesting, migration, or wintering in Kansas and Nebraska (Andres and Stone 2009).

In Montana, the proposed Project route would cross habitats that may support nesting mountain plovers such as prairie dog towns or ground-squirrel burrows. Mountain plovers also are known to occur in flat barren areas that are underlain with bentonite in Valley County, Montana, but the proposed Project route would not cross through bentonite fields in Valley County. Most mountain plover nesting in Montana is concentrated south of the proposed Project route in southern Phillips and Valley counties (Childers and Dinsmore 2008, Andres and Stone 2009).

Construction through prairie dog towns or other suitable nesting habitats in Montana could affect nesting mountain plovers if they are present and if construction occurs during the nesting season. Nests, eggs, and young could be lost during construction. Disturbance could lead to nest abandonment resulting in loss of eggs or young. In Montana, mountain plover surveys are recommended within suitable habitats in Valley and Fallon counties during the May 1 to June 15 breeding season.

To avoid impacts to mountain plovers, the following measures would be implemented:

- Prohibit construction, reclamation, and other ground disturbing activities from April 10 to July 10, to minimize destruction of nests and disturbance of breeding mountain plovers unless surveys consistent with the Plover Guidelines or other methods approved by the USFWS find that no plovers are nesting in the area. Potential mountain plover habitat must be surveyed three times between April 10 and July 10, with each survey separated by at least 14 days. The earlier date will facilitate detection of early-breeding plovers.

- Schedule routine maintenance activities outside the April 10 to July 10 period in mountain plover nesting habitat unless surveys were conducted that indicate that no plovers were nesting in the area and that flightless chicks were not present.
- Delay construction activities within 0.25 mile of active nests for 37 days (typical fledging duration) or until fledging, whichever is sooner.
- Delay construction activities in the vicinity of a brood of flightless chicks for at least seven days or until fledging, whichever is sooner.

The proposed Project could affect, but is not likely to adversely affect mountain plovers based on implementation of the recommended conservation measures identified by the MFWP and the USFWS.

4.8.3.3 State Protected Animals and Plants

All states crossed by the proposed Project route, except Montana, maintain listings of endangered and threatened species and afford protections to these species. Montana maintains a listing of species of concern and those species that are only listed in Montana are discussed in Appendix N, Supplemental Information for Compliance with MEPA. Those species that are listed in Montana and are also state-protected in other states are presented here. The protections afforded animals and plants on these lists are established within the statutes for each state. Further, each state that would be crossed by the proposed Project route maintains a comprehensive wildlife conservation strategy (including a state wildlife action plan), as charged by Congress. These wildlife action plans identify the condition of each state’s wildlife and habitats (including low and declining populations) and identify the challenges to these resources and long-term conservation strategies. Table 4.8-2 lists state endangered and threatened species that have been identified through consultations with state resource agencies as potentially occurring along the proposed Project route.

Table 4.8-2 State-Listed Animals and Plants Potentially Occurring along the Proposed Project Route

Species	Federal and BLM Status ^a	State Status and Occurrence				Comments
		MT	SD	NE	KS	
Mammals						
Black-footed ferret (<i>Mustela nigripes</i>)	E	SC	E	E	E	Inhabits prairie dog towns of the Central Plains grassland habitat, and feeds primarily on prairie dogs.
River otter (<i>Lontra canadensis</i>)			T	T		North America, uses aquatic and riparian habitats, burrows along shorelines, eats fish.
Swift fox (<i>Vulpes velox</i>)	BLM-S	SC	T	E		Central Plains, uses habitats with high densities of small mammal prey, uses dens year-round.
Birds						
Bald eagle (<i>Haliaeetus leucocephalus</i>)	DL BLM-S	SC	T		T	North America, breeds and winters in areas near water, eats fish and waterfowl; resident and migrant populations.

Species	Federal and BLM Status ^a	State Status and Occurrence				Comments
		MT	SD	NE	KS	
Eskimo curlew (<i>Numenius borealis</i>)	E		E	E	E	Inhabit grasslands of North America (summer) and South America (winter).
Interior least tern (<i>Sternula antillarum</i>)	E	SC	E	E	E	Inhabit barren to sparsely vegetated sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines.
Peregrine falcon (<i>Falco peregrinus</i>)	DL BLM-S	SC	E			North America, nests on ledges, cliffs; eats birds, winters coastal proposed Project area, resident and migrant.
Piping plover (<i>Charadrius melodus</i>)	T	SC	T	T	T	Central Plains, inhabits sand and gravel bars and beaches along major rivers and around lakes, reservoirs, ponds, and alkali wetlands.
Whooping crane (<i>Grus americana</i>)	E	SC	E	E	E	Central United States and Canada, use a variety of habitats during migration, including a variety of croplands for feeding, and wetlands that are generally 10 acres or less for roosting. Breed in isolated marshes.
Reptiles						
Massasauga (<i>Sistrurus catenatus</i>)				T		Central United States, Great Lakes region; wet prairies, marshes, uplands; uses burrows, eats animals, short migrations.
Fish						
Blacknose shiner (<i>Notropis heterolepis</i>)			E	E		Northern United States; Keya Paha, Niobrara rivers and tributaries, Spring Creek, SD, NE; weedy lakes streams; eats insects.
Blackside darter (<i>Percina maculata</i>)					T	Central US; clear gravel or sand bottom streams, eats insects.
Finescale dace (<i>Phoxinus neogaeus</i>)			E	T		North United States; Keya Paha, Niobrara, South Fork Elkhorn rivers, Spring Creek, SD, NE; bogs, creeks, rivers, eats invertebrates.
Northern redbelly dace (<i>Phoxinus eos</i>)	BLM-S	SC	T	T		North United States; Upper Missouri River and tributaries, Frenchman's Creek, Yellowstone River and tributaries east of the Powder River, MT; Keya Paha, Niobrara rivers and tributaries, Spring Creek, SD, NE; boggy lakes, streams; herbaceous.
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	E	SC	E	E	E	Inhabit large, free-flowing, warm-water stream systems, where they live close to the bottom of the rivers, where there are sand and gravel bars.
Pearl dace (<i>Margariscus margarita</i>)	BLM-S	SC	T			North United States; Missouri River, Milk River, Rock Creek, Willow Creek, and Frenchman's Creek, MT; Keya Paha tributaries, SD; bogs, clear streams, spawns on sand-gravel; omnivorous.
Sicklefin chub (<i>Macrhybopsis meeki</i>)		SC	E		E	Missouri River, MT, SD, NE, KS; Yellowstone, Milk rivers, MT; large warm rivers with gravel, sand; bottom feeder.

Species	Federal and BLM Status ^a	State Status and Occurrence				Comments
		MT	SD	NE	KS	
Sturgeon chub (<i>Macrhybopsis gelida</i>)	BLM-S	SC	T	E	T	Missouri River; Yellowstone and Powder Rivers, MT; Cheyenne and White rivers SD; large turbid rivers; bottom feeder.
Topeka shiner (<i>Notropis topeka</i>)	E			E	T	Occurs in portions of South Dakota, Minnesota, Kansas, Iowa, Missouri, and Nebraska, primarily in small prairie (or former prairie) streams in pools containing clear, clean water. Topeka shiner streams generally have clean gravel, rock, or sand bottoms.
Invertebrates						
American burying beetle (<i>Nicrophorus americanus</i>)	E			E	E	Inhabits grassland prairie, forest edge, and scrubland, in Arkansas, Kansas, Nebraska, Oklahoma, South Dakota, and Rhode Island.
Plants						
Small white lady's slipper (<i>Cypripedium candidum</i>)				T		North Central, Northeast United States; perennial orchid, mesic-to-wet native prairie, flowers May to June.

^a FC = Federal Candidate; DL = Federally Delisted; BLM-S = BLM Sensitive; E = Endangered; T = Threatened; SC = Species of Concern).

State-protected animals and plants that are also federally protected or candidates for federal protection are discussed in Section 4.8.3.1. State-protected species (not including species designated solely as Montana species of concern) potentially occurring along the proposed Project route include two mammals, three birds, one reptile, eight fish, and one plant. Potential Project-related impacts to state-protected animals and plants, in addition to the proposed conservation measures, would be similar to impacts and mitigation discussed in Section 4.6 for wildlife and Section 4.5 for plants. Additional occurrence information, impact discussions, and conservation measures for state-listed species are presented in the following sections.

State-Protected Mammals

River Otter

River otters (*Lontra canadensis*) are adaptable and use a variety of habitat types, but require aquatic habitats. Although they frequent lakes and ponds, river otters typically live in marshes and along wooded rivers and streams with sloughs and backwater areas. Otters use dens in the ground that were previously built by beavers or other animals. Denning occurs during March to September. Most river otter mortality is related to human activity. In Nebraska, accidental trapping has been the largest known mortality factor for reintroduced animals. Habitat destruction, pesticide use, and pollutants also affect the species (NGPC 2009). River otters are likely to occur throughout the proposed Project area along large rivers. To reduce impacts to river otters, the following measures would be implemented:

- Conduct river otter surveys prior to proposed Project construction along the Bad River, White River, and Cheyenne River in South Dakota and along the Niobrara River, Loup River, North Branch Elkhorn River, South Fork Elkhorn River, Cedar River and Platte River

in Nebraska (if suitable den habitat occurs near the river crossings and if construction would occur during the denning period).

- Restrict construction activities within 0.25 mile of active natal dens.
- Use the HDD method to cross under all of the rivers identified as potentially supporting river otters, except the Bad River in South Dakota and the North Branch and South Fork Elkhorn rivers in Nebraska. This would avoid impacts to shoreline habitats that could potentially be used by denning river otters.

Swift Fox

Swift foxes (*Vulpes velox*) are declining due to habitat loss, alteration, and fragmentation due to agriculture and mineral extraction and collision with automobiles (NatureServe 2009).

As discussed in Section 3.8, the proposed Project occurs within swift fox range in eastern Montana and western South Dakota, and there are several records of this species occurring within the last five years in northern Phillips and Valley counties (MNHP and MFWP 2012c). The proposed Project route would not cross the known distribution of the swift fox in Nebraska.

Potential impacts to swift foxes occurring along the proposed Project route include a temporary loss of feeding and/or denning habitat. Adult foxes could be disturbed by increased human presence and associated construction activities (noise, dust); however, because they are mobile, displacement would likely be temporary, and foxes would likely return to the proposed Project area after construction is completed.

If occupied swift fox dens occur within the proposed Project construction ROW, construction could result in a loss of individual animals and young. It is assumed that both adults and young would not avoid construction activities and would remain in or near natal den sites that could be directly removed by trenching activities or collapsed due to vehicle operation. Construction activities prior to March would avoid direct effects to pups, if present. Loss of individual animals would result in an incremental reduction in the local population; however, no significant population effects are anticipated. If construction activity would occur in suitable habitat in the counties mentioned above during the breeding season (spring/summer), where dens are present, restrictions on construction activities would be required.

To reduce impacts to swift foxes, the following measures would be implemented:

- Revegetate the ROW to support small mammal and insect prey.
- Conduct surveys of potential den sites on federal land and within suitable habitat in the Project footprint in South Dakota.
- Restrict construction activities within 0.25 mile of active natal dens between April 1 and August 31.

Additional mitigation measures recommended by Montana state agencies include:

- Conduct surveys of potential den sites between February 15 and July 31 in suitable habitat in the Project footprint Phillips, Valley, Prairie, Dawson, and Fallon counties in Montana (MDEQ and MFWP).
- Restrict construction activities within 0.31 mile of active dens from February 15 to July 31 in Montana on state or federal land (MDEQ and MFWP).

State-Protected Birds

Two state-protected birds that are not federally listed could occur in the proposed Project area: peregrine falcon (*Falco peregrinus*) and bald eagle (*Haliaeetus leucocephalus*). Occurrence information, impact discussions, and conservation measure descriptions are presented in the following section. Both species are considered migratory and are federally protected under the MBTA. In addition, bald eagles are also federally protected under the BGEPA. A Migratory Bird Conservation Plan would be developed in consultation with the USFWS to comply with the MBTA and implement provisions of Executive Order 13186 by providing benefits to migratory birds and their habitats within the states where the proposed Project would be constructed, operated, and maintained.

Peregrine Falcon

The peregrine falcon is a non-breeding resident, breeding resident, permanent resident, or migrant throughout the United States, primarily west of the proposed Project area; non-breeding residents are found throughout the east and Gulf of Mexico coasts. Two of the three recognized subspecies could occur within the proposed Project area: the American peregrine falcon (*Falco peregrinus anatum*) and the Arctic peregrine falcon (*F.g. tundrius*). Both subspecies were previously federally protected as endangered under the ESA but have been delisted.

Raptor surveys along the proposed Project route did not identify any nesting peregrine falcon nests, and no breeding records of peregrine falcons exist along the proposed Project route; therefore, the proposed Project is not likely to affect nesting peregrine falcons.

Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) occur throughout the United States and the proposed Project area. Four active bald eagle nests were documented during raptor nest surveys for the previously proposed Project during April 2009: two in Montana and two in Nebraska. Five active bald eagle nests were documented during raptor nest surveys during April 2010.

Twelve bald eagle winter roost sites were identified during surveys during February 2009, including three at proposed river crossings in Montana (Yellowstone River, Missouri River, and Frenchman Reservoir); three at proposed river crossings in South Dakota (White River, Cheyenne River, South Fork Moreau River); and six at proposed river crossings in Nebraska (Platte River, Loup River, Cedar River, Dry Creek, Niobrara River, Keya Paha River). Note that the two eagle nests and six winter roost sites in Nebraska were along the previously proposed route, not the currently proposed Project route.

To reduce impacts to bald eagles, the following measures would be implemented:

- Conduct additional nest/roost surveys within one mile of the ROW prior to construction. Surveys would be conducted aurally (preferably by helicopter) between March 1 and May 15, before tree leaf-out to ensure nests are more visible. These aerial surveys would include the following:
- Use helicopters instead of fixed-wing aircraft when possible, since helicopters have the ability to hover and facilitate ground observations. Regardless of aircraft, whenever possible, use two observers to conduct the surveys. Experienced observers may only find 50 percent of

nests on a flight; therefore, two flights would be performed prior to any on-the-ground Project activities, including other biological surveys.

- Record observations of any eagles and/or nest sites using geographic positioning system equipment. The date, location, nest condition, activity status, raptor species, and habitat would be recorded for each sighting.
- Submit the biologist(s) qualifications, survey methods, and survey results to the USFWS.
- Report the location of any active bald eagle nests identified during nest/roost surveys to the USFWS and appropriate state agencies, and, if possible, reroute the pipeline to avoid any nests that occur within 600 feet of the proposed ROW;
- Maintain a no-disturbance buffer of at least 600 feet around active nests, during the nesting season (January 1 through August 15); and
- Consult with USFWS under the BGEPA regarding required buffers and construction activities within 600 feet of active winter roost sites during the winter roosting season (November 1 through April 1) and the ability to conduct construction activities within 600 feet of active winter roosts between 10 a.m. and 3 p.m.

The above measures would be implemented on a site-specific basis in consultation with the USFWS and states that list bald eagles as threatened including South Dakota and Kansas. BLM would be consulted for any bald eagle nest or roost sites that occur within 0.5 mile of the proposed Project route on federal lands in Montana. Additional mitigation measures recommended by MFWP include:

- In Montana, implement measures in the Montana Bald Eagle Management Plan if applicable, or apply current guidance from the USFWS.
- In Montana, restrict construction activities within 0.62 mile of all active territories from March 15 to July 15 including documented sites within 0.5 mile of the Project route on the Missouri River in Montana.

State-Protected Reptiles

The massasauga (*Sistrurus catenatus*), or pygmy rattlesnake, has suitable habitat known to occur along the proposed Project route within Jefferson County, Nebraska, along waterbody shorelines. To reduce impacts to the massasauga in Nebraska, the following measures would be implemented:

- Complete surveys of suitable habitats to identify areas potentially containing the massasauga along the proposed Project route in Jefferson County, Nebraska to clear the area for the massasauga prior to construction.
- Continue consultations with the NGPC.
- Locate the power line to Pump Station 26 in Jefferson County, Nebraska next to a road.

State-Protected Fish

There are seven species of state-protected fish that are not federally listed species potentially occurring within the proposed Project area. These species are within two fish families: minnows

and sturgeon. Additional occurrence information, impact discussions, and conservation measure descriptions are presented in the following section.

Minnows

Six state-protected minnows potentially occur in waters crossed by the proposed Project including: one shiner, two chubs, and three dace.

Blacknose Shiner

The blacknose shiner (*Notropis heterolepis*) potentially occurs within suitable habitat in waterbodies crossed by the proposed Project route in South Dakota and Nebraska. There are five known populations in Nebraska. Occurrence and habitat surveys completed in 2009 identified four previously proposed stream crossings containing marginally suitable habitat and one currently proposed stream crossing with good habitat in Nebraska, and two proposed stream crossings containing suitable habitat in South Dakota. Surveys are planned for 2013 in suitable habitat along the currently proposed Project route.

Finescale Dace

Populations of the finescale dace (*Phoxinus neogaeus*) in South Dakota and Nebraska occur as small, isolated pools that have been declining steadily since European settlement of this region over 100 years ago. Primary threats to finescale dace include habitat alteration and the introduction of non-native fishes. Finescale dace occur in small, confined habitats with permanent spring seeps, usually at the headwaters of small streams. In accordance with recommendations by the SDGFP and NGPC, field surveys of waterbodies identified as potentially containing finescale dace or habitat suitable for this minnow were conducted. No finescale dace were found during fall 2009 field surveys, although two locations contained habitat suitable for this species in South Dakota. Surveys did not identify suitable habitat for this species along the previously proposed Project route in Nebraska, and surveys planned for 2013 would determine the habitat suitability for this species along the currently proposed route through the state.

Northern Redbelly Dace

The northern redbelly dace (*Phoxinus eos*) has suffered population declines as a result of habitat alteration and the introduction of non-native fishes. In some parts of the northern United States and Canada, the northern redbelly dace hybridizes with its close relative, the finescale dace. The resulting hybrids are all females and produce female clones as offspring. The northern redbelly dace potentially occurs in: the Upper Missouri River and tributaries, including Frenchman's Creek, and the Yellowstone River and tributaries east of the Powder River, Montana; in tributaries of the Keya Paha River in South Dakota; and in tributaries of the Niobrara River, and South Fork Elkhorn River in Nebraska.

Surveys of stream crossings identified as potentially containing the northern redbelly dace or its habitat, as identified by the SDGFP and NGPC, did not find this minnow, although two stream crossings contained suitable habitat in South Dakota. In Nebraska, surveys along the previously proposed Project route did not identify suitable habitat for this species; surveys planned for 2013 would determine the habitat suitability for this species along the currently proposed route through the state.

Pearl Dace

The pearl dace (*Margariscus margarita*) potentially occurs in suitable habitat in the proposed Project area in the Missouri River, Milk River, Frenchman's Creek, Rock Creek, and Willow Creek in Montana, and tributaries to the Keya Paha River in South Dakota.

Surveys of waterbodies identified as potentially containing pearl dace or their habitat were conducted in 2009 and found no pearl dace, although two proposed stream crossings in South Dakota contained suitable habitat. In Nebraska, surveys along the previously proposed route did not identify suitable habitat for this species; surveys planned for 2013 would determine the habitat suitability for this species along the currently proposed route through the state.

Sicklefin Chub

The sicklefin chub (*Macrhybopsis meeki*) potentially occurs in the Missouri, Milk, and Yellowstone rivers in Montana, and in the Cheyenne and White rivers in South Dakota. This species is not expected to occur in South Dakota along the proposed Project route (USGS 2006a).

Sturgeon Chub

The sturgeon chub (*Macrhybopsis gelida*) occurs in the Yellowstone, Powder, and Missouri rivers and some of their tributaries in Montana, the Cheyenne and White rivers in South Dakota, and the Platte River in Nebraska.

For the minnows listed above, construction through streams during spawning periods could result in disruption of spawning and loss of eggs and young. Additionally, construction methods that lead to increased siltation and turbidity (cloudiness in the water) could temporarily displace these fish. Construction conservation measures to reduce fine sediment would minimize displacement of feeding minnows. Water withdrawals for use in the HDD crossing method or for hydrostatic test purposes could lead to fish entrainment. Water withdrawal would be performed consistent with permit requirements and intake hoses would be screened to prevent entrainment of fish. Protections for aquatic life during water withdrawal for HDD and hydrostatic testing would be implemented for all proposed water sources. Construction timing considerations and BMPs for maintaining water quality and flow would reduce potential impacts on state-protected minnows.

Mitigation measures for these fish may vary from state to state. In South Dakota, the following conservation measures would apply:

- Suitable habitat determinations along the route would be made by SDGFP.
- Conduct presence/absence surveys if suitable habitat is present .
- If surveys results are negative for these minnows, no further conservation measures would be required.
- If survey results are positive for these minnows, exclude construction activities during the spawning period (to be provided by SDGFP), and/or salvage and relocate the minnows.

In addition, surveys have been recommended in South Dakota for the blacknose shiner, northern redbelly dace, and pearl dace in tributaries of the Keya Paha River that would be crossed by the proposed Project route in South Dakota. In response to these survey recommendations by the

SDGFP, presence/absence and habitat surveys were completed in tributaries to the Keya Paha River for blacknose shiner, northern redbelly dace, finescale dace, and pearl dace. As described above, none of these minnows were found during the survey, but two proposed stream crossings in South Dakota, Lute Creek and Buffalo Creek in Tripp County, contained habitat suitable for blacknose shiner, northern redbelly dace, and pearl dace.

In Nebraska, NGPC recommended surveys for the blacknose shiner, northern redbelly dace, and finescale dace in tributaries of the Niobrara and South Fork Elkhorn rivers that would be crossed by the proposed Project route. NGPC has requested that Keystone re-consult to identify additional conservation measures if any of these species are found within any streams surveyed for the proposed Project. In accordance with NGPC's recommendation, presence/absence and habitat surveys for these species were conducted in 2009, at several previously proposed Project waterbody crossings. These species were not identified in any of the surveyed streams, but potential habitat for the blacknose shiner was identified at five proposed waterbody crossings along the previously proposed Project route. Additional surveys for these species are planned for 2013 in suitable habitat along the currently proposed Project route through Nebraska.

Pipeline crossing method selection for non HDD streams would be based on site-specific fish surveys during the year of construction, as it is difficult to predict future stream flow conditions and appropriate construction techniques.

The use of HDD stream crossing technology would avoid impacts to these minnows and their habitats. Most large rivers along the pipeline corridor would be crossed using HDD technology. In Nebraska, NGPC recommends HDD methods for any stream crossings occupied by these minnows, as open-cut crossings typically cause effects from increased turbidity and suspended sediment (such as avoidance and gill irritation).

State-Protected Invertebrates

There are no state-protected invertebrate species in Montana, South Dakota, or Nebraska that are potentially present along the proposed Project route.

State-Protected Plants

The small white lady's slipper (*Cypripedium candidum*) may occur within suitable habitat along the proposed Project route in Nebraska.

Potential impacts to the small white lady's slipper include habitat disturbance, trampling, and excavation disturbance. Surveys would be conducted for presence/absence within suitable habitat prior to the proposed Project construction in Antelope, Boyd, Holt, Keya Paha, Nance, and Merrick counties in Nebraska. If this plant is observed within the proposed Project ROW in Nebraska, appropriate mitigation measures would be developed and implemented in consultation with the NGPC.

4.8.3.4 *Animals and Plants of Conservation Concern*

Animals and plants identified during consultations with resource agencies as species of conservation concern that potentially occur along the proposed Project route, but that are not federal- or state-listed species, BLM sensitive species, or Montana species of concern discussed in Appendix N, Supplemental Information for Compliance with MEPA, are evaluated in Table 4.8-3 below.

Table 4.8-3 Species of Conservation Concern

Species	Threats	Potential Impacts	Proposed Mitigation
Birds			
Golden eagle (<i>Aquila chrysaetos</i>)	Illegal killing, powerline electrocution, poison intended for coyotes, habitat loss due to conversion to agriculture or suburbs.	Eight nest sites identified along proposed Project route: 2 in MT and 6 in SD, nesting and prey habitat loss or alteration, disturbance to breeding, foraging areas during construction, electrocution or collision mortality from project associated power lines.	Pre-construction raptor surveys. Pre-construction survey prior to March 15; restrict activity within 0.62 mile of active nests from March 15 to July 15 in Montana (MDEQ, MFWP).
Great blue heron (<i>Ardea herodias</i>)	Nest habitat destruction; human disturbance of rookeries; aquatic habitat degradation.	Eleven rookeries identified along proposed Project route: 1 in MT, 1 in SD, 1 in NE, 8 in TX; nesting and prey habitat loss or alteration, disturbance to breeding, foraging areas during construction, electrocution or collision mortality from project associated power lines.	Pre-construction surveys; adjust route to avoid rookery by 500 feet in Montana (MFWP).
Raptor nests (except eagles)	Nest habitat destruction; human disturbance; prey habitat loss or alteration.	~230 nest structures, 38% active along proposed Project route; nesting and prey habitat loss or alteration, disturbance to breeding and foraging areas during construction; electrocution or collision mortality from project associated power lines.	Pre-construction surveys. Restrict activity with 0.62 mile from active nests during March 15 to July 15 in Montana (MFWP).
Fish			
Plains topminnow (<i>Fundulus sciadicus</i>)	Impoundment, channelization, agricultural runoff, dewatering, siltation, introduction and competition from western mosquitofish (<i>Gambusia affinis</i>).	Concern in northwestern two-thirds of Nebraska; dewatering of habitat, mortality during construction, spread of mosquitofish.	Pre-construction surveys completed. Occurrence at one crossing location in SD. Surveys for plains topminnows and other fish species are planned for 2013, to determine if this species occurs in suitable habitat along the proposed Project route in Nebraska.

4.8.4 Recommended Additional Mitigation

No additional mitigation measures are recommended.

4.8.5 Connected Actions

4.8.5.1 *Bakken Marketlink Project*

Construction and operation of the Bakken Marketlink Project would include approximately a 5-mile-long pipeline (route not yet determined) and three crude oil storage tanks and associated facilities near Baker, Montana, adjacent to the proposed Pump Station 14, and two crude oil storage tanks and associated facilities at the proposed Cushing tank farm in Cushing, Oklahoma, to store and deliver Bakken oil production from producers in North Dakota and Montana through the proposed Project pipeline. The potential impacts associated with expansion of the pump station site and tank farm to include the Bakken Marketlink facilities would likely be similar to those described above for the proposed Project pump station, tank farm, and pipeline ROW in those areas.

Currently, there is insufficient information to complete an environmental review of this project. The federal and state permit applications for this project would be reviewed and acted on by other agencies. Those agencies would conduct more detailed environmental reviews of the Bakken Marketlink Project. Preliminary assessments of select species are provided below.

Greater Sage-grouse

The Bakken Marketlink facilities would be constructed near known greater sage-grouse lekking sites, and, therefore, construction could affect greater sage-grouse or their habitat.

Interior Least Tern

The Bakken Marketlink Project is not likely to impact the interior least tern, as these facilities would not be located within areas used by this species.

Piping Plover

The Bakken Marketlink facilities near Baker would not be likely to affect the piping plover, as this region is used during migration.

Sprague's Pipit

The Bakken Marketlink facilities near Baker would be located within a region used by Sprague's pipit, and, therefore, construction and operation of these facilities could adversely affect this species.

Whooping Crane

The Bakken Marketlink facilities near Baker would not likely affect the whooping crane, as this region is not within the primary whooping crane migration corridor.

4.8.5.2 *Big Bend to Witten 230-kV Transmission Line*

Upgrades to the power grid in South Dakota to support power requirements for pump stations would include construction of a new 230-kilovolt (kV) transmission line and a new substation. Currently, there is insufficient information to complete an environmental review of this project. The federal and state permit applications for this project would be reviewed and acted on by other agencies, including the Rural Utilities Service. Those agencies would conduct more detailed environmental reviews of the Big Bend to Witten Transmission Line Project. Preliminary assessments of select species are provided below.

Greater Sage-grouse

The proposed alternative corridors for the 230-kV transmission line in southern South Dakota are generally outside of the range of breeding greater sage-grouse (USFWS 2010), and construction of a transmission line would be unlikely to affect the greater sage-grouse.

Interior Least Tern

Construction of the proposed 230-kV transmission line in southern South Dakota during the breeding season could potentially disturb nesting and brood-rearing interior least terns. Operation of the line would increase the collision and predation hazards for feeding and nesting interior least terns in the Project area.

Whooping Crane

Operation of the proposed 230-kV transmission line in southern South Dakota may increase the collision hazards for migrating whooping cranes, which could adversely affect populations of this species.

4.8.5.3 *Electrical Distribution Lines and Substations*

Electrical power for the proposed Project would be obtained from local power providers. These power providers would construct the necessary substations and transformers and would either use existing service lines or construct new service lines to deliver electrical power to the specified point of use. The electrical power providers would be responsible for obtaining the necessary permits, approvals, or authorizations from federal, state, and local governments.

Most of the proposed new electrical distribution lines to service pump stations would be 115-kV lines strung on a single-pole and/or H-frame wood poles. The poles would typically be about 60- to 80-foot-high with wire span distances of about 250 to 400 feet. Communication towers at pump stations would generally be approximately 33 feet in height. However, antenna height at select pump stations, as determined upon completion of a detailed engineering study, may be taller, but in no event would exceed a maximum height of 190 feet. Communication towers would be constructed without guy wires. The pipe entering and exiting the pump station sites would be located below grade. The pipe manifolding connected with the pump stations would be above ground.

Greater Sage-grouse

The construction of electrical distribution lines to pump stations in Montana and South Dakota would incrementally increase habitat alteration and predation hazards for feeding and nesting

greater sage-grouse in the proposed Project area. Construction of these distribution lines during the breeding season could also potentially disturb breeding, nesting, and brood-rearing birds. Keystone would not construct or operate these electrical distribution lines, but would inform electrical power providers of the candidate status of the greater sage-grouse, and would encourage consultations with Montana and South Dakota regulatory agencies for the electrical infrastructure components constructed for the proposed Project, to prevent impacts to greater sage-grouse.

Based on a 4-mile buffer centered on each confirmed active lek, each unconfirmed active lek with greater sage-grouse observations, or each priority lek, lek buffers would be overlapped by approximately 41 miles of the proposed power distribution lines to pumps (including nine separate leks). The power distribution line to Pump Station 14 in Montana would cross within several hundred feet of an active lek site, and because sage-grouse reportedly avoid tall structures, it could negatively affect activity at this site.

Additional mitigations recommended by the MDEQ to protect greater sage-grouse leks from power distribution lines to pump stations and remote valve locations in Montana, which may be required if the distribution line is considered an associated facility covered by the Major Facilities Siting Act, could include the following:

- Reroute the power distribution line to Pump Station 14, to avoid crossing within 1 mile of active greater sage-grouse leks.
- Review all power distribution line routes to pump stations and remote valve locations for proximity to active greater sage-grouse leks, and develop alternative routing or other mitigation to avoid placement of perches for predators near active greater sage-grouse leks.

Interior Least Tern

The construction of electrical distribution lines across the Platte River in Nebraska would incrementally increase the collision and predation hazards for feeding and nesting interior least terns in the proposed Project area. Construction of these distribution lines during the breeding season could also potentially disturb nesting and brood-rearing birds. Keystone would not construct or operate these electrical distribution lines, but would inform electrical power providers of the requirement to consult with USFWS for the electrical infrastructure components constructed for the proposed Project to prevent impacts to feeding least terns.

The following USFWS conservation measure would apply to power distribution lines to Pump Station 23 and Pump Station 24 in Nebraska:

- Mark distribution lines supplying power to Pump Station 23 and Pump Station 24 with bird deflectors where they cross rivers and within 0.25 mile of each side and between rivers and sand and gravel mining areas to reduce potential injury or mortality to interior least terns.

Additional conservation measures to avoid or minimize adverse impacts to interior least terns from new power lines would vary depending on the circumstances, but may also include the following measures:

- Mark new power lines with bird flight diverters (preferably Swan Spiral diverters or Firefly diverters) within ¼ mile of interior least tern nesting sites, on river systems and commercial sandpit areas.

- If construction of power lines occurs during the least tern breeding season, survey potential riverine or sand pit interior least tern nesting areas within 0.25 mile of new power lines and within 2 weeks of construction, to determine presence of nesting interior least terns. If nesting interior least terns are present, cease construction until all chicks fledge from the site.
- Mark distribution lines supplying power to Pump Station 23 and Pump Station 24 with bird deflectors where they cross rivers and within 0.25 mile of each side and between rivers and sand and gravel mining areas, to reduce potential injury or mortality to interior least terns.

Piping Plover

The construction of electrical distribution lines across the Platte River in Nebraska would incrementally increase the collision and predation (feeding) hazards for feeding and nesting piping plovers in the proposed Project area. Construction of these distribution lines during the breeding season could also potentially disturb nesting and brood-rearing birds. Keystone would not construct or operate these electrical distribution lines, but would inform electrical power providers of the requirement to consult with USFWS for the electrical infrastructure components constructed for the proposed Project to prevent impacts to nesting and feeding piping plovers.

The following recommended conservation measure to reduce current and future potential for injury or mortality to piping plovers would apply to power distribution lines that would serve proposed pump stations and that would cross rivers with good breeding habitat (within a quarter mile of each side of the proposed distribution lines) or that would cross between rivers and sand and gravel mining areas:

- Mark distribution lines supplying power to pump stations with bird deflectors where they cross rivers and within a quarter mile of each side, as well as between rivers and sand and gravel mining areas to reduce potential injury or mortality to piping plovers.

Additional conservation measures to avoid or minimize adverse impacts to piping plovers from new power lines will vary depending on the circumstances, but may also include the following measures:

- Re-route power lines to avoid construction within 0.5 mile of piping plover nesting areas in alkali wetlands in Montana.
- Mark new power lines with bird flight diverters (preferably Swan Spiral diverters- visible plastic spirals or Firefly diverters-bird flapper device,) within 0.25 mile of piping plover nesting sites on river systems and commercial sandpit areas.
- Survey potential riverine or sand pit piping plover nesting areas within 0.25 mile of new power lines and within 2 weeks of construction to determine presence of nesting piping plovers, if power line construction occurs during the piping plover breeding season,. If nesting piping plovers are present, cease construction until all chicks fledge from the site.

Sprague's Pipit

The construction of electrical distribution lines would incrementally increase the collision and predation hazards for breeding Sprague's pipits in the proposed Project area. The power distribution line to proposed Pump Station 10 would cross 18.6 miles of the North Valley Grasslands important bird area (IBA) and may impact survival and reproduction for ground

nesting grassland birds; the same line would cross 2.1 miles of the Charles M. Russell National Wildlife Refuge IBA, which supports 15 birds of global conservation concern (Montana Audubon 2008). Both of these IBAs support breeding Sprague's pipits. Construction of these distribution lines during the breeding season could potentially disturb nesting and brood-rearing birds. Power lines across native grassland habitats may contribute to fragmentation. Keystone would not construct or operate these electrical distribution lines, but would inform electrical power providers of the requirement to consult with USFWS for the electrical infrastructure components constructed for the proposed Project to prevent impacts to nesting and migrant Sprague's pipits.

Whooping Crane

Electrical distribution lines associated with the proposed Project are collision hazards to migrant whooping cranes. The construction of new electrical distribution lines, especially those across riverine or wetland roosting habitats (Yellowstone River in Montana, Missouri River in South Dakota, and Platte River in Nebraska) or between roosting habitat and nearby feeding habitat (including wetlands and grain fields), would incrementally increase the collision hazard for migrating whooping cranes because a portion of the proposed Project area is located within the primary migration corridor for this species. The Platte River electrical distribution line crossing is within the primary migration corridor for whooping cranes, and the Yellowstone and Missouri river electrical distribution line crossings are on the western edge. An analysis of suitable migration stop-over habitat (e.g., large waterbodies, wetlands, and associated agricultural fields) during migration, in relation to preliminary electrical distribution line routes, identified multiple locations within the primary migration corridor for 19 pump stations where electrical distribution lines could potentially increase collision hazards for migrating whooping cranes. Keystone would inform electrical power providers of the requirement to consult with the USFWS for the electrical infrastructure components constructed for the proposed Project to prevent impacts to the whooping crane. The following conservation measures would apply to power distribution lines that would serve proposed Project pump stations within the whooping crane migration route:

- Avoid overhead power line construction within 5.0 miles of designated critical habitat and documented high use areas (locations may be obtained from local USFWS Ecological Services field office).
- Bury all new power lines to the extent practicable, especially those within 1.0 mile of potentially suitable migration stopover habitat.

If it is not economically or technically feasible to bury the power distribution lines, conservation measures to minimize or avoid impacts to migrating whooping cranes would vary depending on the circumstances, but may include the following:

- Within the 95 percent migration corridor, mark new lines within 1.0 mile of potentially suitable habitat and an equal amount of existing line within 1.0 mile of potentially suitable habitat within the identified migration corridors (at a minimum within the 75 percent corridor, preferably within the 95 percent corridor).
- Within the 95 percent migration corridor, install bird flight diverters to minimize the risk of collision.

- Outside the 95 percent migration corridor, mark new lines within 1.0 mile of potentially suitable habitat at the discretion of the local USFWS Ecological Services field office, based on the biological needs of the whooping crane.
- Develop a compliance monitoring plan that requires written confirmation that the power lines have been marked, and that the markers are maintained in working condition.

American Burying Beetle

Some power distribution lines to pump stations coincide with areas of potentially suitable habitat or occupied habitat, including:

- Tripp County, South Dakota—Pump Station 21—good habitat.
- Holt County, Nebraska—Pump Station 22—low quality habitat.

Construction and maintenance of power lines to these pump stations could affect the American burying beetle. Keystone has informed power providers of the requirement to consult with USFWS concerning the construction and operation of the power distribution lines. No other actions connected to the proposed Project would coincide with the currently occupied range of the American burying beetle.

Western Prairie Fringed Orchid

Construction and operation of the new electrical power lines could impact the western prairie fringed orchid if power line ROWs were to disturb potential habitat for this plant. Power providers have committed to consult with the USFWS and to follow recommended avoidance and conservation measures of the USFWS. No other actions connected to the proposed Project coincide with the known distribution of the western prairie fringed orchid.

Peregrine Falcon

Surveys of power distribution line routes associated for the proposed Project did not identify any nesting peregrine falcon nests. Migrant and feeding peregrine falcons could use power poles as vantage perches and could collide with power lines.

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