

**South Dakota Public Utilities Commission
 TransCanada Keystone Pipeline, LP
 Docket HP07-001
 Response to Staff's First Data Request**

**June 18, 2007
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Data Request:

Per 20:10:22:16, please provide breeding times and places and pathways of migration for the terrestrial biotic environment.

Response:

The following tables summarize the various terrestrial species potentially occurring along the Keystone Pipeline corridor in South Dakota. Species are characterized as resident (R), transitory migrant (T) or breeding migrant (B). Migratory pathways for the transitory migrant species identified below consist of migration north across state in the spring and migration south in the fall. Breeding/nesting and habitat information is also provided.

Table 1-7-1 Migratory Terrestrial Species Potentially Occurring Within the South Dakota Project Area

Species	Transitory (T) or Breeding (B)	Breeding Season	Breeding Habitat
Dark Geese: Canada goose <i>Branta canadensis</i> White-fronted goose <i>Anser albifrons</i> Brant <i>Branta bernicla</i>	B, T	Nesting occurs mid-April to late-May.	Found in various habitats near water. Breed and feed in areas usually near lakes, ponds, large streams, inland marshes. Forage in pastures, cultivated lands, grasslands, and flooded fields. Only Canada goose breeds in SD. Brant is a rare migrant in SD.
Light Geese: Snow goose <i>Chen caerulescens</i> Ross' goose <i>Chen rossii</i>	T	N/A	Found in various habitats near water, foraging also in pastures, cultivated lands and flooded fields. Present in project area only during migration.
Tundra swan <i>Cygnus columbianus</i>	T	N/A	Generally found in lakes, sloughs, rivers, sometimes fields, in migration. Present in project area only during migration.

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Species	Transitory (T) or Breeding (B)	Breeding Season	Breeding Habitat
Sandhill crane <i>Grus canadensis</i>	T	N/A	Present in project area only during migration.
Dabbling ducks: includes a number of species such as mallard and teal	B, T	Nesting occurs from early-May to early July.	Primarily found in shallow waters such as ponds, lakes, marshes, and flooded fields; in migration and in winter mostly in fresh water and cultivated fields.
Diving ducks: includes a number of species such as canvasback and redhead	B, T	Nesting occurs from early-May to early July.	Commonly found on marshes, ponds, lakes, rivers and bays.
Mergansers and Coot	B, T	Nesting occurs from early-May to early July.	Commonly found on marshes, ponds, lakes, rivers and bays.
Woodcock <i>Scolopax mir</i> Snipe <i>Gallinago gallinago</i>	B, T	Nesting occurs from early-May to early July.	Wetlands, marshes, moist woodlands and thickets.
Mourning dove <i>Zenaida macrora</i>	B, T	Nesting occurs from late April to late July.	Inhabits open woodland, forest edge, cultivated lands with scattered trees and bushes.
Shorebirds (e.g. plovers, sandpipers, dowitchers, phalaropes)	B, T	Nesting occurs from mid-May to early July.	Lakeshores, sandy beaches, islands, grasslands, wet meadows and wetlands.
Raptors (e.g. eagles, hawks, falcons, owls)	B, T	Nesting occurs from February to late July depending on species.	Inhabit a variety of habitats from open woodlands to dense riparian forests, field edges, cultivated lands, prairie with scattered trees and bushes and open grasslands.
Neotropical Migrants (e.g. sparrows, warblers, vireos, wrens, finches, swallows)	B, T	Nesting occurs from mid-May to late July.	Inhabit a variety of habitats from open woodlands to dense riparian forests, field edges, cultivated lands, prairie with scattered trees and bushes and open grasslands.

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Table 1-7-2 Resident Terrestrial Species Potentially Occurring Within the South Dakota Project Area

Species	Breeding Season	Habitat Association
Mammals		
White-tailed deer <i>Odocoileus virginianus</i>	Breeding occurs mid-October through mid-December. Fawning occurs late-May to late-June.	This species is found in various habitats from forests to fields with adjacent cover. In northern regions, usually requires stands of conifers for winter shelter. In the north and in montane regions, limited ecologically by the depth/duration/quality of snow cover; summer ranges are traditional but winter range may vary with snow conditions.
Eastern gray squirrel <i>Sciurus carolinensis</i>	Breeding occurs in February and March. Young are typically born in late-April and May.	This species prefers mature deciduous and mixed forests with abundant supplies of mast (e.g., acorns, hickory nuts). A diversity of nut trees is needed to support high densities. Also uses city parks and floodplains. Seldom far from permanent open water. Nests in tree cavities or in leaf nests, usually 25 feet or more aboveground.
Eastern fox squirrel <i>Sciurus niger</i>	Breeding occurs in two segments; the first in mid-January through late-March and the second from late-June through July. Young are born in May and June and again in August.	Often found in open mixed hardwood forest or mixed pine-hardwood associations, this species has also adapted well to disturbed areas, hedgerows, and city parks. Prefer savannas or open woodlands to dense forests. Western range extensions are associated with riparian corridors of cottonwoods and fencerows of osage orange. Dens are in tree hollows (preferred) or leaf nests (especially in mild weather).
Eastern cottontail <i>Sylvilagus floridanus</i>	Breeding occurs between late-February and August. Young are typically born from early-April to September.	This species is generally found in early mid-successional habitats over much of continental U.S. May be found in brushy areas, open woodlands, swampy areas, stream valleys, grasslands, and suburbs. Very adaptable species. Nests usually are in shallow depressions in thick vegetation or in underground burrows.
Coyote <i>Canis latrans</i>	Breeding typically occurs January through March. Pups are typically born between March and June.	Wide ranging and found in virtually all habitats. Often considered a pest species, especially by the livestock industry.
Red fox <i>Vulpes vulpes</i>	Breeding typically occurs in January and February. Pups are typically born in March and early April.	Found in various open and semi-open habitats. Usually avoids dense forest, although open woodlands frequently are used. Sometimes occurs in suburban areas or even cities. Maternity dens are in burrows dug by fox or abandoned by other mammals, often in open fields or wooded areas, sometimes under rural buildings, in hollow logs, under stumps, etc.

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Species	Breeding Season	Habitat Association
Gray fox <i>Urocyon cinereoargenteus</i>	Breeding typically occurs January through March. Pups are typically born between March and June.	Found in a variety of habitats including chaparral, rimrock, riparian, old fields, early successional stage woodlands. Usually prefers a diversity of open and wooded areas rather than large tracts of homogeneous habitat.
Swift fox <i>Vulpes velox</i>	Breeding typically occurs December through February. Pups are typically born in late-March, April and early May.	The swift fox resides in shortgrass and midgrass prairies over most of the Great Plains. The swift fox will also use agricultural lands and irrigated meadows. Its range includes most of SD.
Raccoon <i>Procyon lotor</i>	Breeding typically occurs in February and March. Young are typically born in April and May.	Found in a variety of habitats but prefers riparian and edges of wetlands, ponds, and lakes.
Long-tailed weasel <i>Mustela frenata</i>	Breeding typically occurs in July and August. Delayed implantation occurs and young are typically born in April and May.	This is the most widespread weasel. It is found in all habitats within the project area but prefers brushland, open woodlands, and habitats near water.
Least weasel <i>Mustela nivalis</i>	Breeding typically occurs in February and March. This species does not show delayed implantation and females may produce several litters per year. Young are typically born from April to August.	Inhabits cultivated fields, brushy areas, open woods, wetland edges, and meadows.
Mink <i>Mustela vison</i>	Breeding typically occurs late February to early April. Young are typically born in late April and May.	Wetlands; riparian woodlands; edges of lakes, rivers, and ponds.
Striped skunk <i>Mephitis mephitis</i>	Breeding typically occurs in February and March. Young are typically born in May and early June.	This species prefers semi-open country with woodland and meadows interspersed, brushy areas, bottomland woods. Frequently found in suburban areas. Dens often under rocks, log, or building. May excavate burrow or use burrow abandoned by other mammal.

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Species	Breeding Season	Habitat Association
Eastern spotted skunk <i>Spilogale putorius</i>	Breeding typically occurs in late March and April. Young are typically born in June.	Found in forested areas or habitats with significant cover. Also open and brushy areas, rocky canyons and outcrops in woodlands and prairies. When inactive or bearing young, occupies den in burrow abandoned by other mammal, under brushpile, in hollow log or tree, in rock crevice, under building, or in similar protected site.
American badger <i>Taxidea taxus</i>	Breeding typically occurs in August and September. Delayed implantation occurs and young are typically born in March and April.	This species prefers open grasslands and fields and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow.
American beaver <i>Castor canadensis</i>	Breeding typically occurs in January, February and early March. Young are typically born in late-May and June.	Beavers inhabit permanent sources of water of almost any type; they prefer low gradient streams (which they modify), ponds, and small mud-bottomed lakes with dammable outlets. Beavers are associated with deciduous tree and shrub communities.
Birds		
Ring-necked pheasant <i>Phasianus colchicus</i>	Nesting typically occurs from late-April to early-July.	Non-native game bird. Inhabits open country (especially cultivated areas, scrubby wastes, open woodland and edges of woods), grassy steppe, desert oases, riverside thickets, swamps and open mountain forest. Winter shelter includes bushes and trees along streams, shelterbelts, and fencerows. Usually nests in fields, brushy edges, or pastures, also along road ROWs. Nest is shallow depression scratched out by female.
Wild turkey <i>Meleagris gallopavo</i>	Nesting typically occurs from late-April to early-June.	Found in forest and open woodland, scrub oak, deciduous or mixed deciduous-coniferous areas. Also agricultural areas in some regions, which may provide important food resources in winter. Roosts in trees at night. Nests normally on the ground, usually in open areas at the edge of woods.
Sharp-tailed grouse <i>Tympanuchus phasianellus</i>	Nesting typically occurs from mid-April to early-June.	Inhabits short to tall grasslands intermixed with cropland and shrublands.
Northern bobwhite <i>Colinus virginianus</i>	Nesting typically occurs from early-May to early-July.	Inhabits a wide variety of vegetation types, particularly early successional stages. Occurs in croplands, grasslands, pastures, fallow fields, grass-brush rangelands, open pinelands, open mixed pine-hardwood forests, and habitat mosaics. In the Midwest and Northeast, associated principally with heterogeneous, patchy landscapes comprised of

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Species	Breeding Season	Habitat Association
		moderate amounts of row crops and grasslands and abundant woody edge. Nests on the ground, in a scrape lined with grasses and/or other dead vegetation.
Gray partridge (Hun) <i>Perdix perdix</i>	Nesting typically occurs from early-May to early-July.	Non-native game bird. Inhabits cultivated land, hedgerows, brushy pastures, and meadows.
Ruffed grouse <i>Bonasa umbellus</i>	Nesting typically occurs from early-May to early-July.	Inhabits mixed and deciduous woodlands. Not common in project area but occurs in isolated areas of SD.

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Table 1-7-3 Special Status Species Potentially Occurring Within the South Dakota Project Area

Species	Status	Breeding Season	Habitat Association
Birds			
Bald eagle <i>Haliaeetus leucocephalus</i>	R, T, B	Nesting occurs January through July.	This species typically occurs near large bodies of water that support suitable roosting and foraging habitat. Nest sites are located in proximity to open water and generally are found in mature heterogeneous stands of multi-storied trees, but also may nest on cliffs. Winter habitat typically includes areas of open water, adequate food sources, and sufficient diurnal perches and night roosts. Winter season: November 15 through March 15.
Whooping crane <i>Grus americana</i>	T	N/A	During migration, this species feeds and roosts in a variety of habitats including croplands, large and small freshwater marshes, the margins of lakes and reservoirs, and submerged sandbars in rivers. Spring and Fall migration through the project regions generally occurs from February through April and from October through November, respectively.
Piping plover <i>Charadrius melodus</i>	B	Nesting occurs mid-May through mid-July.	This species inhabits open sandy areas and saline flats with little vegetation along rivers, lakes, ponds, and marshlands. It nests on sandbars and sand and gravel beaches with short, sparse vegetation along inland lakes, on natural and dredge islands in rivers, on gravel pits along rivers, and on salt-encrusted bare areas on interior alkali ponds and lakes. Sparse clumps of grass or herbaceous vegetation are important habitat components.
Interior least tern <i>Sterna antillarum athalassos</i>	B	Nesting occurs mid-May through mid-July.	Nesting habitat consists of sparsely vegetated sandy, gravelly, or silty, beaches and sandbars within wide, unobstructed river channels or salt flats along lake shorelines and irrigation reservoirs. Nest locations are generally away from the water's edge since nesting typically begins while river flows are high and relatively small amounts of sandy habitat is exposed.
Reptiles			
False map turtle <i>Graptemys pseudogeographica</i>	R	Breeding occurs in April and May. Young typically hatch in August and September.	This species inhabits slow to swift current rivers and streams, river sloughs, oxbow lakes, ponds, impoundments, and backwaters. They are devoted baskers, often resting just below the surface on submerged branches from fallen trees and projecting logs.

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Table 1-7-4 Species of Special Concern Potentially Occurring Within the South Dakota Project Area

Species	Status	Breeding Season	Habitat Association
Birds			
Red-necked grebe <i>Podiceps grisegena</i>	B	Nesting occurs from May-June.	Nesting habitat includes wetlands with patches of open water and stands of bulrush or similar emergent vegetation. Fresh water lakes, lagoons, floodwaters, and calm rivers with some emergent vegetative cover are commonly used. Prefers areas having both open water and wetland vegetation.
American white pelican <i>Pelecanus erythrorhynchos</i>	B	Nesting occurs in May or June.	This species inhabits rivers, lakes, reservoirs, estuaries, bays, marshes. Rests on islands and peninsulas. Nests usually on islands or peninsulas in brackish or freshwater lakes, isolated from mammalian predators. Nests on low, flat or gently sloping terrain in a slight depression or on a mound of earth and debris.
Cooper's hawk <i>Accipiter cooperii</i>	R, B, T	Nesting occurs April-June.	Breeds in deciduous, mixed, and coniferous forests.
Broad-winged hawk <i>Buteo platypterus</i>	B, T	Nesting occurs early-May to mid-June.	Breeding habitat includes broadleaf and mixed forest, preferring denser situations, less frequently in open woodland. Regularly nests near wet areas and forest openings, edges, and woodland roads. Migrates along ridges, river valleys, and shorelines.
Black tern <i>Chlidonias niger</i>	B	Nesting occurs in April and May.	This species is found in marshes, along sloughs, rivers, lakeshores, and impoundments, or in wet meadows, typically in sites with mixture of emergent vegetation and open water. Nests may be placed in a variety of vegetative situations, from dense stands of emergent vegetation to open water
Common tern <i>Sterna hirundo</i>	B	Nesting occurs from April to July.	This species is commonly found on lakes, rivers, and marshes. Nests on sandy, pebbly, or stony beaches, matted vegetation, marsh islands, and grassy areas; in large lakes or along rivers.
Amphibians			
Northern cricket frog <i>Acris crepitans</i>	R	Eggs laid late spring-early summer.	This species inhabits the edges of sunny marshes, marshy ponds, and small slow-moving streams in open country. It may periodically range into adjacent non-wetland habitats. Hibernation sites are underground on land near water; may hibernate communally.

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Species	Status	Breeding Season	Habitat Association
Reptiles			
Blanding's turtle <i>Emydoidea blandingii</i>	R	Breeding occurs April to May. Eggs hatch September-October.	This species inhabits productive, clean, shallow waters with abundant aquatic vegetation and soft muddy bottoms over firm substrates. It is found in ponds, marshes, swamps, bogs, wet prairies, river backwaters, sloughs, slow moving rivers, protected coves, and lake shallows and inlets. Extensive marshes bordering rivers provide excellent habitat.
Spiny softshell <i>Apalone spinifera</i>	R	Breeding occurs June-July. Eggs hatch September-October.	These turtles are found in large rivers, impoundments, lakes, ponds along rivers, pools along intermittent streams, oxbows; usually in areas with open sandy or mud banks and soft bottom. Basks on shores or on partially submerged logs. Burrows in bottom of pool during winter inactivity.
Smooth softshell <i>Apalone mutica</i>	R	Breeding occurs in May. Eggs hatch August-September.	This species occurs in large rivers and streams with moderate to fast currents. Very infrequently found in lakes, impoundments, and shallow bogs. Waterways with sandy bottoms and a few rocks or aquatic plants are preferred. Sandbars are important for basking and egg laying sites. Prefer larger rivers and live in colonies along certain portions.
Ringneck snake <i>Diadophis punctatus</i>	R	Breeding occurs in late-April to Mid June. Eggs laid in late-June and July. Eggs hatch August-September.	This species prefers moist habitats in prairie areas of the mid-west. It has become an ecotonal species, occurring both in the patches of woods and the prairie. It is found in open grassland, pasture, and prairie to forested areas, usually hardwoods but also in other wooded areas. It prefers south or west facing hillsides and is generally found under rocks or on rocky hillsides in forested areas. It requires rocks, logs, stumps, fallen bark; habitats are usually moist. Sometimes found in moist caves.
Fox Snake <i>Elaphe vulpine</i>	R	Breeding occurs April to May. Eggs hatch in July and August.	This species prefers moist areas, such as river valleys, marsh borders, river bottom forests, upland hardwoods, pine barrens, open prairies, scrub areas, and hedge rows; they rarely are far from rivers or streams. May be abundant in heavily farmed prairie areas, frequently found in alfalfa fields and brome grass.

Listing and habitat descriptions based on Chapman and Feldhamer 1982; Burt and Grossenheider 1980; Terres 1980; National Geographic Society 1987; Ehrlich et al. 1988; Fitzgerald, Meaney and Armstrong 1994.