

3.7 FISHERIES

3.7.1 Introduction

This section discusses fisheries resources in the proposed Project area. The description of fisheries resources is based on information provided in the 2011 Final Environmental Impact Statement (Final EIS) as well as new circumstances or information relevant to environmental concerns that have become available since the publication of the Final EIS, including the proposed reroute in Nebraska. The information that is provided here builds on the information provided in the Final EIS as well as the 2013 Draft Supplemental EIS and, in many instances, replicates that information with relatively minor changes and updates; other information is entirely new or substantially altered.

Specifically, the following information, data, methods, and/or analyses have been substantially updated in this section from the 2011 document:

- The number and type of stream crossings and stream crossing methods have changed due to changes in the proposed Project route and updated field survey information provided by TransCanada Keystone Pipeline, LP (Keystone). The stream crossing assessment is comprised of a desktop analysis based on National Hydrography Dataset (NHD) information and supplemented by Keystone field survey descriptions where available.
- Information on the fisheries resources for waterbodies within 10 miles downstream of the proposed Project area has been included.

In response to public and agency comments, text throughout the section has been revised and expanded from the 2013 Draft Supplemental EIS where necessary.

The description of the fisheries resources is based on information and data provided by government agencies and subject matter experts. This information was supplemented by additional field surveys conducted by Keystone along the proposed pipeline route.

The scope of the following discussion of the affected environment focuses on fish and fish habitats that currently exist within and immediately adjacent to the proposed pipeline right-of-way (ROW). Waterbodies in this assessment are those that support fish and fish habitat and that would be crossed by the proposed pipeline. These waterbodies include streams, rivers, ponds, reservoirs, and lakes. In the event of a spill or release of material from the proposed pipeline, habitats far downstream from the ROW could be impacted. This section also includes an overview of the fish resources in these downstream waters; however, impacts to these resources are discussed in the Sections 3.13 and 4.13, Potential Releases.

Summary

The proposed Project route would affect surface waters of the Missouri River drainage basin, which contain a diverse assemblage of recreationally and commercially significant fish species. The proposed Project area includes coldwater, coolwater, and warmwater fisheries, and a majority of the fish species are broadly distributed throughout. While spawning periods vary by species and latitude, most of these fish species are late spring and early summer spawners (see Figure 3.7.1-1). Many of these species are native North American fish, some of which are within

their historic native range; others have been introduced into watersheds where they did not previously occur; and one is an exotic Eurasian introduction.

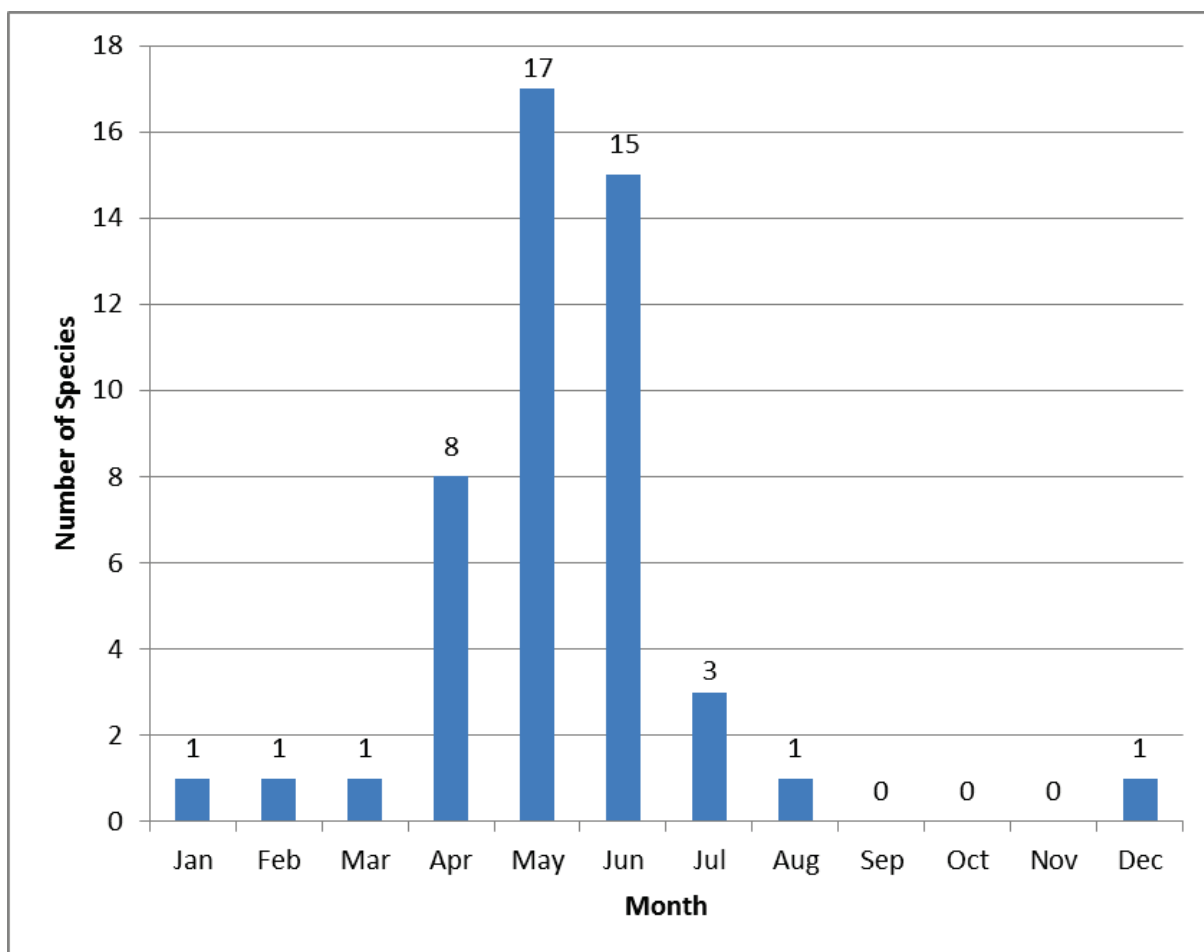


Figure 3.7.1-1 Species Spawning by Month

The proposed Project would involve 56 stream crossings on 52 perennial streams (two are crossed multiple times) that contain known or potential habitat for fish of recreational or commercial value (see Figure 3.7.1-2). Nine of the 56 crossings would occur in Montana, where the horizontal directional drilling (HDD) method would be used to cross the Frenchman, Milk, Missouri, and Yellowstone rivers, and the other 5 crossings would use either the dry dam-and-pump or the dry flume open-cut crossing method. In South Dakota, where 16 of these perennial stream crossings would occur, the Little Missouri, Cheyenne, Bad, and White rivers would be crossed using the HDD method, and the other 12 perennial stream crossings would be completed by one of the open-cut methods. The remaining 31 crossings (of 27 different perennial streams with known or potential habitat for fish of recreational or commercial value) would occur in Nebraska. The HDD method would be used to cross the Keya Paha, Niobrara, Elkhorn, Loup, and Platte rivers while the others would use one of the open-cut methods.

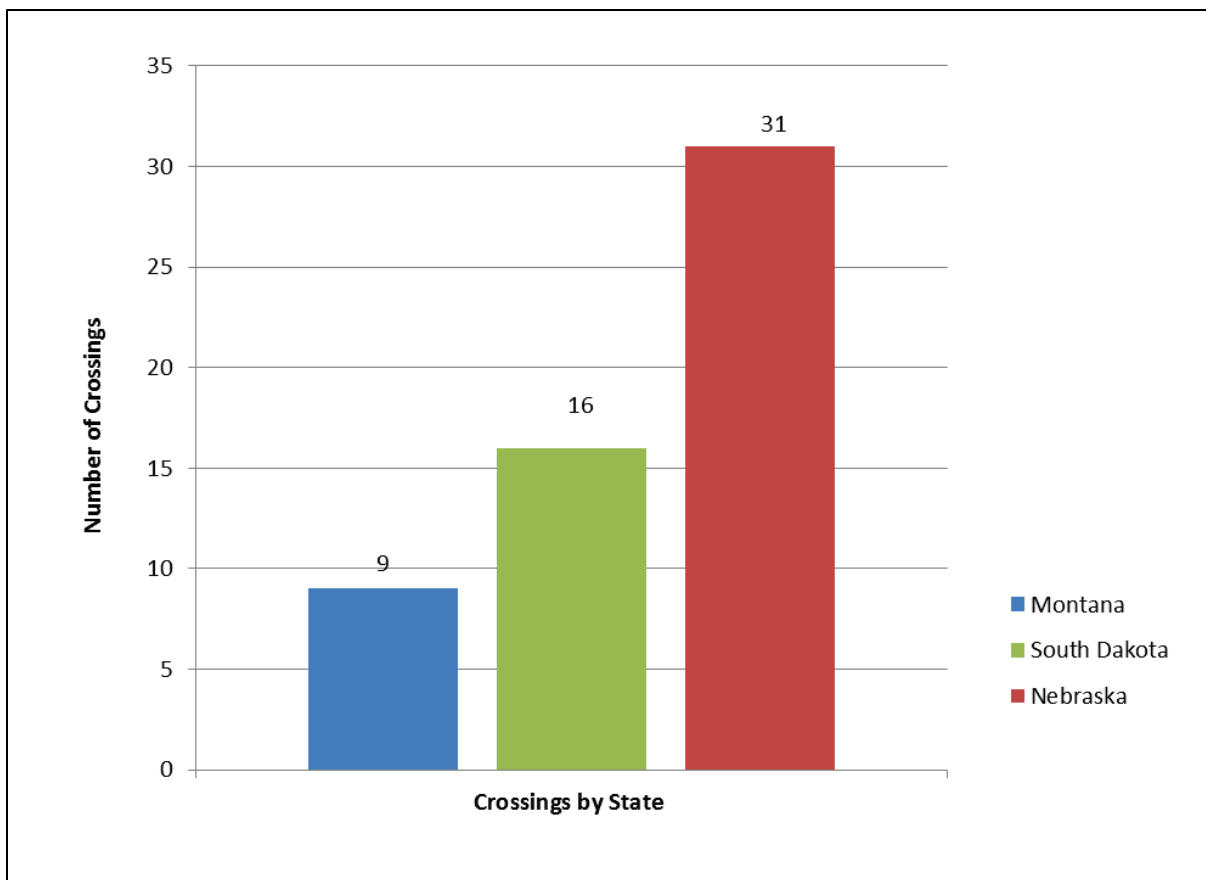


Figure 3.7.1-2 Perennial Waterbody Crossings by State

Connected actions include the Bakken Marketlink Project, the Big Bend to Witten 230-kilovolt (kV) Transmission Line, and electrical distribution lines and substations. These connected actions would be constructed in areas similar to the proposed Project route; therefore, similar fisheries resources discussed for the proposed Project route are expected.

3.7.2 Environmental Setting

The general environmental setting for fish resources along the proposed Project route is the surface waters of the Missouri River drainage basin. The proposed Project route enters the United States in Montana and crosses the semi-arid plain and prairie regions of the northern Midwest that make up the Great Plains. The Missouri River originates in the high mountains of Montana east of the continental divide (Brown 1971). The Missouri River is the longest river in North America, and the streams and rivers in Montana, South Dakota, and Nebraska that are crossed by the proposed Project corridor all drain into the Missouri River.

Most portions of the Great Plains that were formerly prairie and grasslands are now heavily impacted by agriculture and, to a lesser extent, affected by urbanization, which has caused hydrologic disturbance and physical modification including stream channelization, habitat fragmentation, and alteration of the riparian corridor (Dodds et al. 2004). Prairie streams are

subject to flooding as well as drying, and species inhabiting these streams have evolved to accommodate significant environmental disturbance and intermittency of flow (Dodds et al. 2004). Part of this accommodation is the ability to rapidly recolonize previously dry stream channel reaches (Matthews 1988). The availability of refuge habitat during dry spells and floods can influence stream fish assemblages (Schlosser 1995) and, in some instances, is critical for the completion of fish lifecycles (Schiemer and Spindler 1989, Bisson et al. 1982).

The typical stream types found within the Missouri River Basin include those characterized as prairie streams and big rivers. The fish fauna of prairie streams are often less diverse than fish fauna in streams of other regions because prairie streams are subject to widely fluctuating environmental conditions, and only fish tolerant of these conditions can persist (Pflieger 1975).

In big-river systems like the mainstem Missouri River, species have adapted to tolerate high levels of turbidity. Historically, the Missouri and other big rivers transported large quantities of sediment downstream. However, the sediment load transported by big rivers of the Midwest today is reduced because of the construction of large dams and reservoirs that trap suspended sediments.

Lakes, streams, and rivers in the region of the Nebraska segment of the proposed Project route are inhabited by 75 fish species, many of which are common big-river generalists capable of withstanding a wide range of environmental conditions. The majority of the native fish species in this region are adapted to variable prairie stream environments and are typically small-bodied minnows and chubs. Pike, bass, bluegill, and other game fish have been introduced to the regions' lakes, reservoirs, and ponds to provide recreational fishing opportunities (Schneider et al. 2011). The proposed Project route crosses within approximately 4 miles southwest of the Nebraska Game and Park Commission's Grove Trout Rearing Station, a rainbow trout hatchery that is partially supported by surface water from East Verdigre Creek and is surrounded by 2,000 acres of the Grove Lake Wildlife Management Area. However, the proposed route does not cross any NHD intermittent or perennial waterbodies connected to the East Verdigre watershed.

Juvenile and adult aquatic insects, worms, shellfish, and other invertebrate life are assumed to inhabit all proposed Project area waterbodies. These organisms provide food for juvenile and adult fish. Species composition of macroinvertebrate communities depends on the physical and chemical characteristics of the water; hence, macroinvertebrates are important indicators of water quality (Keystone 2009).

Lakes, ponds, and reservoirs within 10 miles downstream of the proposed Project area typically support the same species of recreational and commercial fish as the streams that supply them. These waterbodies can provide suitable habitats for spawning, rearing, and foraging, and can also provide seasonal refuge when conditions in adjacent stream segments become unsuitable. While natural lakes typically do not restrict fish movement, many artificial waterbodies are constructed with dams and outlet configurations that prevent upstream fish movement, thus isolating upstream populations and limiting re-colonization following extirpation events.

3.7.2.1 Fisheries Resources

This section addresses fish species with recreational or commercial significance that occur in waterbodies that would be crossed by, or are within 10 miles downstream of, the proposed Project route. Special status fish species including federal threatened, endangered, proposed and candidate species, Bureau of Land Management (BLM) sensitive species, state threatened and endangered species, and species of conservation concern are discussed in Sections 3.8 and 4.8, Threatened and Endangered Species and Species of Conservation Concern, and in Appendix H, 2012 Biological Assessment, 2013 USFWS Biological Opinion, and Associated Documents.

Common fish species with recreational or commercial value that occur across the proposed Project area are listed in Table 3.7-1. Many of these species are native North American fish that have been introduced into watersheds where they did not previously occur in order to provide for recreational fisheries, while the common carp (*Cyprinus carpio*) is an exotic Eurasian introduction.

Table 3.7-1 Common Recreational and Commercial Fish Associated with Proposed Project Route Stream Crossings

Species or Group	Status ^a	Montana	South Dakota	Nebraska
Bass (smallmouth, largemouth, spotted) (<i>Micropterus</i> spp.)	Recreational	x	x	x
Bluegill (<i>Lepomis macrochirus</i>)	Recreational		x	x
Brook trout (<i>Salvelinus fontinalis</i>)	Recreational	x	x	x
Buffalo (bigmouth, smallmouth) (<i>Ictiobus</i> spp.)	Recreational/ Commercial	x	x	x
Bullheads (black, yellow) (<i>Ameiurus</i> spp.)	Recreational	x	x	x
Burbot (<i>Lota lota</i>)	Recreational	x		
Common carp (<i>Cyprinus carpio</i>)	Recreational/ Commercial	x	x	x
Channel catfish (<i>Ictalurus punctatus</i>)	Recreational/ Commercial	x	x	x
Crappie (black, white) (<i>Pomoxis</i> spp.)	Recreational	x	x	x
Flathead catfish (<i>Pylodictis olivaris</i>)	Recreational/ Commercial		x	x
Freshwater drum (<i>Aplodinotus grunniens</i>)	Recreational/ Commercial	x	x	x
Green sunfish (<i>Lepomis cyanellus</i>)	Recreational	x	x	x
Minnnows (baitfish) Fathead minnow (<i>Pimephales promelas</i>); Golden shiner (<i>Notemigonus crysoleucas</i>); and others	Recreational/ Commercial	x	x	x
Muskellunge (<i>Esox masuiongy</i>)	Recreational		x	x

Species or Group	Status^a	Montana	South Dakota	Nebraska
Northern pike (<i>Esox lucius</i>)	Recreational	x	x	x
Paddlefish (<i>Polyodon spatula</i>)	MT-SC; BLM-S	x		
Pumpkinseed (<i>Lepomis gibbosus</i>)	Recreational	x	x	x
Rainbow trout (<i>Oncorhynchus mykiss</i>)	Recreational	x	x	x
Sauger (<i>Sander canadensis</i>)	MT-SC; BLM-S	x	x	x
Shad (baitfish) Gizzard shad (<i>Dorosoma cepedianum</i>)	Commercial		x	x
Shortnose gar (<i>Lepisosteus platostomus</i>)	MT-SC	x	x	x
Shovelnose sturgeon (<i>Scaphirhynchus platyrhynchus</i>)	Commercial	x	x	x
Sunfish (longear, orangespot, redbreast, warmouth) (<i>Lepomis</i> spp.)	Recreational	x	x	x
Walleye (<i>Sander vitreus</i>)	Recreational	x	x	x
Yellow perch (<i>Perca flavescens</i>)	Recreational/ Commercial	x	x	x

^a BLM = Bureau of Land Management, MT = Montana, S = Sensitive, SC = species of concern

Several fish that support important recreational or commercial fisheries have declined in abundance and are currently protected within some portions of their range. These fish are classified as federal threatened, endangered, proposed and candidate species, BLM sensitive species, state threatened and endangered species, or species of conservation concern and are discussed in more detail in Sections 3.8 and 4.8, Threatened and Endangered Species and Species of Conservation Concern, and in Appendix H, 2012 Biological Assessment and Associated Documents.

Spawning periods and habitats for some recreational and commercial fish species in the proposed Project area are shown in Table 3.7-2. Fish species are particularly sensitive to habitat disruption caused by construction during spawning periods. Spawning periods for fish that range across the length of the proposed Project route would vary depending on latitude. After spawning, the type and length of habitat use for larval and juvenile fish rearing vary depending on the fish species, life history stage, and site-specific conditions. Eggs would be expected to hatch relatively soon after spawning activities (e.g., 3 to 16 days for common carp). Therefore, use of these waterbodies for larval rearing would be expected to overlap and extend beyond the identified spawning periods in Table 3.7-2.

Table 3.7-2 Recreational and Commercial Fish Spawning Periods and Habitats

Species or Group ^{b,c}	Month ^a												Habitat
	J	F	M	A	M	J	J	A	S	O	N	D	
Bass (<i>Micropterus</i> spp.)													Shallow areas over clean gravel and sand bottoms
Buffalo (bigmouth, smallmouth) (<i>Ictiobus</i> spp.)													Spawn at depths of 4 to 10 feet over gravel or sand substrates
Bullhead (yellow and black) (<i>Ameiurus</i> spp.)													Usually spawn in weedy or muddy shallow areas by building nests
Burbot (<i>Lota lota</i>)													Eggs are scattered over sand or gravel substrates
Common carp (<i>Cyprinus carpio</i>)													Adhesive eggs scattered in shallow water over vegetation, debris, logs, or rocks
Flathead catfish (<i>Pylodictis olivaris</i>)													Nest builders with habitat similar to channel catfish
Channel catfish (<i>Ictalurus punctatus</i>)													Prefer areas with structure such as rock ledges, undercut banks, logs, or other structure where they build nests
Crappie (<i>Pomoxis</i> spp.)													Eggs deposited in depressions on bottom in cove or embayments
Freshwater drum (<i>Aplodinotus grunniens</i>)													Buoyant eggs drift in river currents during development
Muskellunge (<i>Esox masuiongy</i>)													Spawn in tributary streams and shallow lake channels
Northern pike (<i>Esox lucius</i>)													Small streams or margins of lakes over submerged vegetation
Paddlefish (<i>Polydon spatula</i>)													Move into rivers and spawn over flooded gravel bars
Sauger (<i>Sander canadensis</i>)													Move into tributary streams or backwaters where they spawn over rock substrates
Shad (baitfish) (<i>Dorosoma cepedianum</i>)													Spawn in shallow water over sandy/rocky substrates; eggs scattered, adhere to objects
Shovelnose sturgeon (<i>Scaphirhynchus platyrhynchus</i>)													Spawning occurs in open water channels of large rivers over rocky or gravelly bottoms
Sunfish (<i>Lepomis</i> spp.)													Nest builders in diverse substrates and shallow depths
Walleye (<i>Sander vitreus</i>)													Spawn in lakes and streams in shallow water over rock substrates

Species or Group ^{b,c}	Month ^a												Habitat
	J	F	M	A	M	J	J	A	S	O	N	D	
White bass (<i>Morone chrysops</i>)													Egg masses deposited over sand bars, submerged
Yellow perch (<i>Perca flavescens</i>)													Shallow open water over weedy areas

Sources: NatureServe 2009; Eddy and Underhill 1974; Harlan et al. 1987; Pflieger 1975; Pflieger 1997; Hoese and Moore 1977; Robison and Buchanan 1988; Thomas et al. 2007; Miller and Robison 2004; Ross 2001; and Pattillo et al. 1997.

^a Spawning periods are approximate and could occur in only a portion of a particular month.

^b Rainbow trout and brook trout are not included because these species are not documented to spawn in streams crossed by the proposed Project route; their presence and persistence is a result of continued hatchery fish stocking programs.

^c Some species are grouped into families in this table (i.e., sunfish), but are presented as individual species in Table 3.7-1.

Fisheries information was derived primarily from fishery distribution maps available on agency websites and supplemented by information provided by regional biologists. The proposed Project route would involve 56 perennial stream crossings and 974 intermittent stream crossings. Of these streams, the proposed Project route would cross 52 perennial streams (two crossed multiple times) that contain known or potential habitat for fish of recreational or commercial value. Surface water classifications used to assess potential fisheries resource values of streams that would be crossed by the proposed pipeline route are provided in Appendix D, Waterbody Crossing Tables and Required Crossing Criteria for Reclamation Facilities. Section 3.7.2.2, Types of Fisheries Affected, discusses the perennial crossings for each state, the proposed crossing method, and the presence or absence of a fishery of special concern based on state surface water classifications.

There are 580 lakes, ponds, or reservoirs that are within 10 miles downstream of proposed water crossings. A large majority of these waterbodies consists of small ponds or reservoirs, while 36 are greater than 10 acres in surface area. A comprehensive list of these waterbodies is provided in Appendix D, Waterbody Crossings (Tables 7, 8, and 9). These waterbodies typically support the same recreational and commercial fish species that are listed in Table 3.7-1, with spawning periods and habitats that are equivalent to those provided in Table 3.7-2.

3.7.2.2 *Types of Fisheries Affected*

This section addresses fisheries potentially found in perennial streams (including rivers) that would be crossed by the proposed Project route, as well as all ponds, lakes, and reservoirs within 10 miles downstream of these crossings. Although intermittent streams may be of some value in terms of fisheries resources, they are not addressed in this section because they are unable to support a year-round fishery, and impacts are expected to be minimal. The proposed Project area includes coldwater (trout), coolwater (perch and pike), and warmwater (catfish, bullheads, sunfish, carp, and bass) fisheries.

Surface water classifications based on a waterbody's water quality and resource values are important elements of fisheries management in each state. The classification systems for each of the states crossed by the proposed pipeline route are administered by the following agencies:

- Montana Department of Environmental Quality (MDEQ 2012);
- South Dakota Department of Environment and Natural Resources (SDDENR 2012); and
- Nebraska Department of Environmental Quality (NDEQ 2012b).

Table 3.7-3 provides the locations of proposed pipeline crossings at perennial streams identified as contributing habitat for recreational and commercial fisheries. No surface water resources containing fisheries were identified near the facilities to be located in North Dakota (pipe yard and rail siding) or in Kansas (pump stations).

Table 3.7-3 Proposed Perennial Stream Crossings along the Proposed Project Route

County	Approximate Milepost	Waterbody Name	Relevant Surface Water or Fishery Class/Rating^{a,b}	Number of Crossings
Phillips	25	Frenchman River	Non-Salmonid	1
Valley	39	Rock Creek	Non-Salmonid	1
Valley	40	Willow Creek	Non-Salmonid	1
Valley	83	Milk River	Non-Salmonid	1
Valley/ McCone	90	Missouri River	Marginal Salmonid/Red Ribbon, Class II Recreational Fishery	1
Dawson	198	Yellowstone River	Non-Salmonid/Blue Ribbon, Class I Recreational Fishery	1
Fallon	247	Sandstone Creek	Non-Salmonid	1
Fallon	265	Little Beaver Creek	Non-Salmonid	1
Fallon	285	Boxelder Creek	Non-Salmonid	1
Harding	293	Shaw Creek	Fish Propagation	1
Harding	295	Little Missouri River	WW Semi-permanent	1
Harding	300	Kimble Creek	Fish Propagation	1
Harding	304	Unnamed Tributary to Dry House Creek	Fish Propagation	1
Harding	322	South Fork Grand River	WW Semi-permanent	1
Harding	326	Clarks Fork Creek	WW Marginal	1
Butte	361	North Fork Moreau River	WW Marginal	1
Perkins	369	South Fork Moreau River	WW Marginal	1
Meade	388	Pine Creek	WW Marginal	1
Meade	428	Narcelle Creek	Fish Propagation	1
Meade	430	Cheyenne River	WW Permanent	1
Haakon	486	Bad River	WW Marginal	1
Jones	498	Dry Creek	Fish Propagation	1
Tripp	541	White River	WW Semi-permanent	1
Tripp	547	Cottonwood Creek	Fish Propagation	1
Tripp	600	Buffalo Creek	Fish Propagation	1
Keya Paha	602	Unnamed Tributary to Buffalo Creek	Class B Warmwater	3
Keya Paha	611	Wolf Creek	Class B Coldwater	1
Keya Paha	613	Unnamed Tributary to Keya Paha River	Class B Warmwater	1
Keya Paha	614	Spotted Tail Creek	Class B Coldwater	1
Keya Paha	614	Unnamed Tributary to Spotted Tail Creek	Class B Warmwater	1
Keya Paha	617	Alkali Creek	Class B Warmwater	1
Boyd	618	Keya Paha River	Class A Warmwater	1
Holt	626	Niobrara River	Class A Warmwater	1
Holt	627	Beaver Creek	Class B Coldwater	1
Holt	633	Big Sandy Creek	Class A Warmwater	1
Holt	640	Unnamed Tributary to Brush Creek	Class B Coldwater	1
Holt	640	Unnamed Tributary to Brush Creek	Class B Coldwater	1
Holt	647	North Branch Eagle Creek	Class B Coldwater	1
Holt	649	Middle Branch Eagle Creek	Class B Coldwater	1

County	Approximate Milepost	Waterbody Name	Relevant Surface Water or Fishery Class/Rating ^{a,b}	Number of Crossings
Holt	653	East Branch Eagle Creek	Class B Coldwater	1
Holt	663	Redbird Creek	Class B Warmwater	3
Holt	680	South Branch Verdigre Creek	Class B Coldwater	1
Antelope	683	Big Springs Creek	Class B Coldwater	1
Antelope	713	Elkhorn River	Class A Warmwater	1
Boone	744	Beaver Creek	Class A Warmwater	1
Nance	760	Plum Creek	Class B Warmwater	1
Nance	762	Loup River	Class A Warmwater	1
Nance	767	Prairie Creek	Class B Warmwater	1
Polk	775	Platte River	Class A Warmwater	1
York	803	Beaver Creek	Class B Warmwater	1
York	813	West Fork Big Blue River	Class A Warmwater	1
Fillmore	832	Turkey Creek	Class B Warmwater	1

Source: Geographic information system data source for waterbody name—U.S. Geological Survey (USGS) NHD (USGS 2012); data source for Montana—MDEQ 2012; data source for South Dakota—SDDENR 2012 and South Dakota Legislature 2012; data source for Nebraska—NDEQ 2012a.

^a WW = Warmwater

^b Surface water or fishery class / rating descriptions are provided in the text of the sections following the table.

Montana

Montana distinguishes surface water classifications based on the water’s ability to support coldwater (salmonid) or warmwater (non-salmonid) fisheries (MDEQ 2012). The perennial streams that the proposed Project route would cross in Montana are classified as supporting non-salmonid fisheries, except for the Missouri River crossing below Fort Peck dam, which is classified as marginal for supporting salmonid fisheries (Table 3.7-3). The Missouri River east of Fort Peck Reservoir to the border of Richland County is classified as a Red Ribbon—Class II Recreational Fishery, or a recreational fishery of high value. Salmonid fish supported by this fishery include brown trout (*Salmo trutta*), mountain whitefish (*Prosopium williamsoni*), and rainbow trout (*Oncorhynchus mykiss*). The reach of the Yellowstone River where the proposed Project route would cross in Dawson County is classified as a Blue Ribbon—Class I Recreational Fishery, or a recreational fishery of outstanding value. Non-salmonid fish supported by this fishery include burbot (*Lota lota*), channel catfish (*Ictalurus punctatus*), paddlefish (*Polyodon spatula*), sauger (*Sander canadensis*), smallmouth bass (*Micropterus dolomieu*), and walleye (*Sander vitreus*).

The proposed Project route would cross nine perennial streams in Montana that support recreational or commercial fisheries. Four of these perennial stream crossings – the Frenchman River (Milepost [MP] 25), the Milk River (MP 83), the Missouri River (MP 90), and the Yellowstone River (perennial side channel at MP 198 and main channel at MP 198) – would use the HDD method (see Section 2.1.9, Waterbody Crossings, for a description of the HDD method). All other perennial stream crossings in Montana would use either the dry dam-and-pump or the dry flume open-cut crossing method, (also described in Section 2.1.9). As the State of Montana noted in their proposed Environmental Specifications (Appendix N, Supplemental Information for Compliance with the Montana Environmental Policy Act), open-cut wet methods are not allowed if water is present at the time of construction.

There are 178 lakes, ponds, or reservoirs located within 10 miles downstream of a proposed water crossing in Montana (Appendix D, Waterbody Crossings [Table 7]). Named waterbodies with a surface area in excess of 10 acres and within the 10-mile downstream range include Lindsay Reservoir and Salsbery Reservoir. Additionally, there are four waterbodies that are unnamed on the U.S. Geological Survey 2012 NHD (USGS 2012a) with surface areas of 10 acres or larger within the 10-mile downstream range.

South Dakota

South Dakota classifies surface waters based on a waterbody's ability to support coldwater and warmwater fish presence and propagation (SDDENR 2012). Warmwater classes are subdivided into permanent fish life propagation, semi-permanent fish life propagation, and marginal fish life propagation. Nine of the 16 perennial fish streams the proposed Project route would cross in South Dakota are classified as supporting warmwater fisheries, while the remaining seven are classified more generally as supporting fish propagation, with no warmwater or coldwater designation (Table 3.7-3). Those classified as supporting warmwater fisheries include one permanent warmwater fishery (Cheyenne River), three semi-permanent warmwater fisheries (Little Missouri, South Fork Grand, and White rivers), and five marginal warmwater fisheries. Common recreational fish found in these streams include catfish, walleye, sauger, bullhead, and bass.

Of the 16 perennial streams crossed by the proposed Project that support recreational or commercial fisheries in South Dakota, four of these – the Little Missouri River (MP 295), the Cheyenne River (MP 430), the Bad River (MP 486), and the White River (MP 541)—would be crossed using the HDD method. In addition, the HDD method would be used to cross one intermittent waterbody: Bridger Creek (MP 434). All other perennial streams in South Dakota would be crossed by one of the open-cut methods.

Waterbodies and reservoirs located within 10 miles downstream of a proposed water crossing are summarized in Appendix D, Waterbody Crossing Tables and Required Crossing Criteria for Reclamation Facilities (Table 9). The larger of these waterbodies (those greater than 10 acres) include Lake Gardner and 18 other reservoirs that are unnamed on the USGS 2012 NHD (USGS 2012c). The analysis identified approximately 304 additional waterbodies located within 10 miles downstream of a proposed crossing that were less than 10 acres.

Nebraska

Nebraska classifies surface waters based on its ability to support coldwater or warmwater fish and 1) as providing habitat for year-round maintenance of one or more identified key species (Class A) or 2) as providing habitat where the variety of warmwater biota is limited by water volume or flow, water quality, substrate composition, or other habitat conditions (Class B) (NDEQ 2012b). Key species are those listed by federal or state agencies as endangered, threatened, sensitive, or otherwise protected species, or recreationally important aquatic species. The proposed Project would cross 27 perennial streams in Nebraska that have fishery classifications (Table 3.7-3). Of these, 10 are coldwater streams that are rated as Class B waters. Coldwater fish that may be maintained year-round by stocking could include brook trout (*salvelinus fontinalis*), brown trout, or rainbow trout. Of the 17 crossings of warmwater streams, eight are rated Class A and nine are rated Class B. Common recreationally important warmwater fish include catfish, bass, crappie, sauger, shovelnose sturgeon (*Scaphirhynchus platyrhynchus*),

sunfish, walleye, and yellow perch (*Perca flavescens*). In addition, forage fish (bait fish) important for the federally endangered interior least tern (*Sternula antillarum*) are found in the Platte, Niobrara, and Loup rivers.

Of the 31 proposed crossings (of 27 different perennial streams that support recreationally important fisheries) in Nebraska, five of those would be completed using the HDD method, including the Keya Paha River (MP 618), the Niobrara River (MP 626), the Elkhorn River (MP 713), the Loup River (MP 762), and the Platte River (MP 775). Other perennial stream crossings in Nebraska would use one of the open-cut methods. Two perennial fisheries streams (unnamed tributary to Buffalo Creek and Redbird Creek) would each be crossed three times by the proposed route.

Waterbodies and reservoirs located within 10 miles downstream of a proposed water crossing are summarized in Appendix D, Waterbody Crossings (Table 8). The larger of these waterbodies (those greater than 10 acres) include Cub Creek Reservoir 14C, Cub Creek Reservoir 13C, Recharge Lake, Big Indian Creek Reservoir 8-E, Big Indian Creek Reservoir 10-A, and six unnamed reservoirs (unnamed according to the USGS 2012 NHD [USGS 2012b]). The analysis identified an additional 68 waterbodies or reservoirs located within 10 miles downstream of a proposed crossing that were less than 10 acres in size.

3.7.3 Connected Actions¹

There are three connected actions of the proposed Pipeline route:

- Bakken Marketlink Project;
- Big Bend to Witten 230-kV Transmission Line; and
- Electrical Distribution Lines and Substations.

3.7.3.1 Bakken Marketlink Project

Construction and operation of the Bakken Marketlink Project would consist of a 16-inch pipeline approximately 5 miles in length, additional piping, booster pumps, meter manifolds, and two 250,000-barrel tanks that would be used to store crude from connecting third-party pipelines and terminals. The Bakken Marketlink Project facilities would be located within private land currently used as pastureland and hayfields.

The fisheries resources found along and in the proposed connected action project area are similar to the fisheries resources of the proposed pipeline corridor itself. As discussed in the Surface Water subsection in Section 4.3.5.1, Bakken Marketlink Project, based on a GIS analysis of the planned route and intersections with waterbodies identified in the 2012 NHD, the preliminary Bakken Marketlink Project route would cross seven intermittent waterbodies as well as one perennial waterbody, Sandstone Creek, which has a non-salmonid fishes beneficial use (C-3) classification listed in the MDEQ Final Water Quality Integrated Report (MDEQ 2012).

¹ Connected actions are those that 1) automatically trigger other actions which may require environmental impact statements, 2) cannot or will not proceed unless other actions are taken previously or simultaneously, 3) are interdependent parts of a larger action and depend on the larger action for their justification.

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

The Big Bend to Witten 230-kV Transmission Project is located in Lyman and Tripp counties in south-central South Dakota. The project would consist of replacing the existing Big Bend-Fort Thompson No. 2 230-kV Transmission Line Turning Structure on the south side of the Big Bend Dam on Lake Sharpe; constructing a new double-circuit 230-kV transmission line for approximately 1 mile southwest of the dam; and constructing a new Lower Brule Substation south of the dam. The existing Witten Substation would be expanded immediately to the northeast to accommodate the new 230-kV connection. The fisheries resources found along and in the proposed connected action project area are similar to the fisheries resources of the proposed pipeline corridor itself.

3.7.3.3 *Electrical Distribution Lines and Substations*

Multiple private power companies or cooperatives would construct distribution lines to deliver power to 20 pump stations located along the length of the pipeline in the United States. These distribution lines would range in length from approximately 0.1-mile to 62 miles, with the average being 13 miles long, and are estimated to extend about 377 miles, combined. The distribution lines would range in capacity from 69 kV to 240 kV, but the majority would have a capacity of 115 kV. The lines would be strung on a single-pole and/or on H-frame wood poles. The fisheries resources found along and in the proposed connected action project area are similar to the fisheries resources of the proposed pipeline corridor itself.

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